ROLE OF SUGAR FACTORY IN POVERTY AMELIORATION OF THE POOR SUGARCANE GROWER IN KUSHINAGAR, DISTRICT OF UTTAR PRADESH

THESIS

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Dedicated To

The pious lotus feet of Respected Bade Baabooji Late Vishwanth Dubey

The person

with divine significance who

taught me to change the unprevailing lines of my fate.

CERTIFICATE OF ORIGINAL WORK

This is to certify that studies conducted by **MR. AJAY KUMAR DWIVEDI** during 1998-2001 as reported in the present thesis was under my guidance and spervision, The result reported by him are genuine and the candidate has written himself the script of the these himself.

His thesis entitled **"Role of sugar factory in poverty amelioration of the poor sugarcane grower in Kushinagar district of U.P."** is therefore, being forward for the acceptance for the award of Degree of DOCTOR OF PHILOSOPHY in the faculty of sciencee, university of Allahabad.

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AJAY KUMAR DWIVEDI

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INTRODUCTION

CHAPTER-I

INTRODUCTION

India is the birth place of sugar and sugarcane. In the sphere of modern technology and its scientific use, it has also research first in sugar production in the world. The art of making Gur was discovered in India during 4th & 6th Centuries. In the primitive process of Gur making the sugarcane was cut into pieces and crushed by a heavy weight to obtain the juice. The juice thus, obtained was boiled and stirred until it converts into solid form. These solid forms of Uneven shapes and size were called "Sarkara" the Sanskrit term of gravel. The modern word "Sugar" is a derivative of the word "Sarkara" The layer solids were called "Khand" from which word "Candy" has descended.

The chinese emperor Tsai-hang sent a mission to Bihar in about 600 A.D. to ascertain and study the art of sugar manufacture from India the knowledge of sugar making went over to persia. It would thus, be seen that India has been the original home of sugar cane and also of sugar manufacture.[1] It is also mentioned by Agrawal, R.N.[2] That Indian sugar industry has developed on the

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1. Indian Sugar year Book.

2. Agrawal,R.N. "Sugar Industry in India My re-collection," pp. 3.

lines of sugar manufacture in Java, a Dutch colony then. Where they manufactured plantation white sugar direct from cane juice insteaed of refined sugar. There is no intermediate raw sugar and the sugar cane juice is subjected to intense, clarification process, by which most of the impurities and colour of juice are eleminated and a brilliant shining golden juice is obtained from which sugar is crystallised. In the refining process, first of all, raw sugar is made by a partial clarification of sugar cane juice and then this raw brown sugar is completely remelted and again subjected to clarification, filtration and refining over activated bone char. The white liquar thus, obtained is concentrated in vacum pans and crystallised."

Presently sugar industry is the second largest industry next to cotton textiles industry primarily based on agriculture in our country. Agriculture is the back-bone of Indian economy and contributes a lot in the national income. The significance of Indian agriculture arises from the fact that it has been the source of supply of raw materials to our leading industries as cotton, sugar and Vanaspati industries etc. most of the urgent requirements of the people such as foods, clothings and raw materials for industries are generally met by the agricultural products and they contribute 27 per cent of the Gross Domestic Products, which share over 8 percent of the export of the country. In a complex economy like ours, it is difficult to seprate, even for analytical purposes, a single industry such as agriculture from the total economic progress in which it is embeded. As the modern sugar technology entirely new to India, we had to impart sugar technology and engineers from java after

whose process the sugar factories were installed in India. The first sugar factory was established in U.P. state of our country during 1874 and was named Kanpur sugar factory. This factory was purely a big Gur refinery which made this tract a major supplier of their product. But, first sugar factory to produce sugar directly from Sugarcane was established at Pratappur in Deoria district of Uttar Pradesh of India, in 1903 and next sugar factory was established in 1905 at Rosa in Shahjahanpur district of Western U.P.

In the year 1929 Sugar Committee of the Imperical council of Agricultural research was appointed to recommend measures for better functioning of sugar industry. As per the recommendation of the committee Tariff Board was appointed in India during 1930 to examine the question of granting statutory protection to Sugar industry. The Tariff Board submitted its report in 1931 in Favour of protection to the industry.[1]

Tariff Protection Board was granted against imported javanese sugar. This was the main reason due to which the imported sugar was cheaper and less sweeter than deshi chinese (Sugar). Consequently confectioners could use more foreign sugar and less khoya (coagulated milk) for preparing sweets.

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1. Agrawal G.C. and Goswami,H.G. — "Impact of cane cooperative on sugarcane in uttar pradesh" Publication no. 120 Agro Economic Research Centre, Allahabad. pp. 35.

The grant of tariff protection to the industry in 1932 by the imposition of a 185 per cent ad-valorum duty on javanese sugar gave a great fillip to mechanised sugar protection in India. The Number of cane crushing sugar mills increased from 29 in 1931 to 1937 in 1936-37. Production of all kinds of sugar registered an increase until 1934-35, after which gur refine and khandsari sugar went into decline, and only the index of cane sugar continued to climb up. Net imports of foreign sugar of Indian made sugar declined from 230 per cent in 1930-31 to an insignificant 1.8 per cent in 1936-37.[1]

The post protection story of India's sugar Industry is revealing from a scanty 32 working units in 1931-32. The numbers of Factories rose to 130 by 1934-35 and the volume of sugar out put which had stood at 1.72 lakh tonnes rose to 9.47 lakh tonnes by 1935-36. This rate of expansion in such a short period constituted almost a world record. At, any rate, in judged by the number of the production units, there was no parallel for it in the history of Indian Industries nor did the rate of growth halt after 1934-35 and 1935-36 by 1938-39 the production of sugar touched 12.77 lakh tonnes. During the five war years i.e. 1939 -40 to 1943-44 reverse trend manifested itself, the volume of production tending to decline from 12 lakh tonnes level except for 1942-43. The next seven years i.e. till 1950-51

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1. Amin, Shahid Sugarcane & Sugar in Gorakhpur, Oxford University Press, New Delhi, pp. 111.

the industry had to pass through a difficult time for various reasons when the output fluctuated practically between 9 to 11 lakh tonnes mainly on account of the instability on sugar cane supplies caused by the Government's preference to food crops during the war years [1]

After achieving independence an industries (Development and Regulation Act, 1951) was passed by the government under which all the existing 139 sugar factories were legally registered and almost all the activities of these sugar factories came under the direct control of the government of India.

In the year 1950-51 the actual sugar production was 11.34 lakh tonnes and sugar cane production was 57.05 M. Tonnes. However, the consumption demand was going up considerbly. The target of sugar production under the first five year plan was revised to 18 lakh tonnes from the original fixed target of 15 lakh tonnes in the beginning of the plan. For achieving its target the capacity of the factories both by creating new units and increasing the cpacity of the existing units was sanctioned by the Government of India and, a record production of sugar i.e. 18.9 lakh tonnes was achieved by the end of the plan. Decadewise production of sugar in our country after the independence indicated that, it was found to be increased considerably in all the succeeding decades from 11.34 lakh tonnes during 1951 under which all the 120.47 lakh tonnes sugar and

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1. Indian Sugar year book. 1990-91 volume - I pp. 2

sugar cane production 241.05 m. tonnes in the decade of 1990-91. and its growth rate were continued in year 1995-96, in year production of sugar was 164.3 lakh tonnes and sugar cane production 281.10 m. tonnes record production and next two years 1996-97 and 1997-98 in production was low. But year 1998-99 in sugar production 152.11 lakh tonnes and sugar cane production was 280 M. tonnes in India there were 441 sugar factories in 1998-99 in which about 55 were in cooperative sector. India is the home of sugarcane being main source of sugar contributes 56% of the total sugar production of the world. The other main sugar producing Countries viz. Brazil, Cuba, Thailand, China, Mexico, Pakistan, Australia, Columbia, Egypt, U.S.A. , Gautemala, Indonesia.

The highest per capita consumption of sugar is in Israel 98.1 kg/year and lowest is in Rawanda 1.6 kg/year and 70% of total sugar production in world comes from cane. The cane is a tropical plant. India is the mother place of the cane.

Countrywise major production areas and position.

S.N.	Country	Major production areas	Remarks
(i)	Brazil	Parahia, Wahia, Peranambko Reo-de-Zenero, Mata distt.	First position in the world in Cane production.
(ii)	India	U.P, Maharashtra, Andhra Tamilnadu, Karnataka,	Second position in world in sugar & Cane production
(iii)	Cuba	Orient, Conague ,Santa-dera, Hawana,	Third in sugar & cane production.
(iv)	China	Yangtisi & Secyang Velleys and	Fourth in cane production.
(v)	Mexico	Planes of gulf and planes of pacific shore	Fifth in cane production.

Uttar Pradesh is the largest producing state of India Fifty per cent sugar cane area is covered by this state and also it's production is about 43.50 per cent of the whole country[1] and around 36 lakh sugarcane farmers supply sugarcane to 122 sugar mills by means of 171 cooperative sugar committees. The state sugar cane development department is involved in increasing per hectare, production in maintaining the efficient supply of sugar cane to sugar factories of which 32 are in cooperative sector, 35 in semi-cooperative sector, 51 in private sector and 4 under the Govt. of India. In 1996-97 the last year of eight five year plan, the sugar cane production of this state was 24.6 per cent of the country, sugar cane production, the target in the second year 1998-99 of the nineth five year plan for 24.40 lakh hectares sugar cane area is to have a 62.00 matric tonnes per hectare average production, and 1512.80 lakh matric tonnes sugar cane production and 54.46 lakh M. Tonnes sugar production, By producing 1625 lakh M. Tonnes of sugar cane at the end of nineth five year plan the requirement of sugar factories can be ful filled by increasing per hectare sugar cane production vs. sugar profit minimum area will be used in this production target itself. In the year 1997-98 first year of nineth five year plan sugar

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1. Indian sugar year book -1999.

cane area, sugar cane production, average yield and sugar production target was prescribed as 24.40 lakh hectare, 1988.30 lakh M. Tonnes and 61.5 M. Tonnes production per hectare and 49.56 Lakh M. Tonnes respectively against which availability of l 21.96 lakh hectares, 1355.17 lakh M. Tonnes. 60.80 Metric Tonnes per hectare and 39.16 Lakh M. Tonnes is expected.

There are 122 sugar factories in the whole state . By this way the total licencing crushing capacity of all 122 sugar factories is 458748 T.C.D.

U.P. has 16.5 per cent gross cropped area accounting for 21.4% per cent of the foodgrain production in the country. But in the industrial sector it has been found backward state. Sugar industry in the state is predominently developed from past. Now, it is also pioneering state in the country and secures second place in sugar production. Out of the total 511 sugar factories licenced in our country till 1996-97, the maximum i.e. 299 were in cooperative sector, 146 private sector and the minimum i.e. only 66 were in public sector on the whole. Among the main sugar producing state the highest i.e. 139 sugar factories were licenced in Mharashtra state and minimum in Gujrat State. Uttar Pradesh is the second important state where there are 122 sugar factories. The following table 1.1 shows the state wise distribution of licenced and installed sugar factories till the year 1997-98 in the main sugar producing states of India.

Table - 1.1

S.No.	States	Total Number of existing licenced sugar factories.			
1	2	3	4	5	6
1.	U.P.	51	35	36	122
2.	Maharashtra	27	-	112	139
3.	Andhra Pradesh	14	7	20	41
4.	Tamil Nadu	17	2	18	37
5.	Gujrat	-	-	26	26
6.	Bihar	20	10	-	30
	All India				511

Sources: India Year Book & U.P. Year Book 2000.

The production of sugar during last 7 years (1991-92 to 1997-98) in the pioneering sugar producing states in India is given in table 1.2.

The record of sugar production during the last 7 years in the main states of India. Contained in the table 1.2 indicates that during 1996-97 and 1997-98, Uttar Pradesh was a leading state where the highest i.e. 40.84 and 39.04 lakh tonnes sugar was produced out of the total i.e. 129.05 and 126.72 lakh tonnes of sugar in India. In other main states of the country such as Maharashtra, Tamilnadu, Gujrat, Andhra Pradesh, Karnataka, Bihar, Punjab, Haryana were the main sugar producing states. While during 1991-92 to 1995-96 the highest sugar producing state was Maharashtra. Thus, currently, Uttar Pradesh is found to be leading state in the production of sugar.

Table - 1.2

Production of Sugar.

States	91-92	92-93	93-94	94-95	95-96	96-97	97-98 7/98
1	2	3	4	5	6	7	8
Subtropical Region	49.88	39.38	35.55	46.65	58.25	55.49	49.00
Uttar Pradesh	36.53	28.57	27.15	36.09	43.60	40.84	39.04
Bihar	4.62	3.27	2.21	3.94	3.79	3.62	3.08
Punjab	3.84	4.09	3.11	3.19	6.32	6.13	3.07
Haryana	4.89	3.45	3.08	3.43	4.54	4.90	3.81
Tropical Region	81.11	64.75	61.35	97.42	102.57	71.05	75.62
Maharashtra	42.19	33.60	27.46	50.25	53.76	34.46	38.55
Gujrat	7.53	7.51	8.26	7.59	11.26	9.67	8.84
Andhra Pradesh	8.43	5.40	6.47	8.74	8.66	7.72	7.76
Karnataka	10.32	8.48	8.31	12.25	12.67	8.70	8.92
Tamil Nadu	12.64	9.76	10.85	18.59	16.22	10.50	11.55
All India	134.11	106.09	98.24	146.43	164.29	129.05	125.72

Source : Directorate of Sugar, Ministry of Food. 2000

Distribution of the average recovery percentages during the last 7 (seven) years (1991-92 to 1997-98) were estimated to be more or

less equal with a slight variation in the years 1992-93 and 1993-94 in the country as a whole. Among the states, higher recovery percentages were estimated during all the seven years in Maharashtra state followed by Gujrat State. In Uttar Pradesh it is estimated lower than the national average, since seven years. As a result of these high recoveries sugar industry has shifted more and more to the Decan from its original home in the north. The following table. 1.3 Shows the average recovery percentages of pioneering states of the country.

Table 1.3

Average Recovery of sugar from Sugarcane.

State	91-92	92-93	93-94	94-95	95-96	96-97
Maharashtra	11.20	11.32	11.14	10.93	10.48	11.11
Gujrat	11.14	11.34	11.09	11.65	10.48	10.71
Karnataka	10.50	10.65	10.48	10.30	9.81	10.54
Andhra Pradesh	9.98	10.18	9.87	9.43	9.54	10.21
Bihar	8.72	9.37	9.20	9.15	8.82	9.23
Tamil Nadu	9.33	9.41	8.96	8.68	8.34	8.95
Haryana	9.76	10.00	9.52	9.19	8.35	8.83
Punjab	9.23	9.39	9.27	9.13	8.70	8.86

Source: Directorate of Sugar, Ministry of Food.

"India is the only country in the whole world where sugar cane is still being sold and valued on the basis of weight, and not on the basis of quality . The Cultivators who are the bulk suppliers of sugar cane to the factories are naturally interested in the tonnage of their production while the factories who are millers are interested in the better quality of sugar cane which will give the higher recovery of sugar and thus bring down the cost of their sugar production, and boosted up their profiles. As for example a rise in the recovery at the rate of 0.1 per cent of the total sugar cane a rough calculation can give an additional profit of Rs. one lakh to a sugar factory crushing 1000-1200 tonnes of Sugarcane per day in a season of 5 months. In this way there was a clash of interests between the growers and the millers, and militated against the propogation of sugar cane varieties with higher sucrose content, whose tonnage per acre was generally poorer.[1]

"In fact the sugar capitalists were never willing to voluntarily guarantee 'minimum prices' to the sugar cane growing peasantry . Even as late as 1945 their spokesman regarded it as 'essentially a piece of social relief' which was unquestionably a forbidding hurdle to be cleared in the onward march of the industry."[2]

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1. Agrawal, R.N. 'Sugar Industry in India' my recollection pp. 203.

2. Gandhi, M.P. 'Problems of the sugar industry in India: scope and prospects of reorganization in the post war period (Bombay 1945 pp. 78).

For the development of sugar and sugar cane production, Government has efforted from time to time. In 1958 a fact finding committee for khandsari sugar was appointed to the Government of India. Guddu Rao Committee on Rehabilitation and Modernisation of the sugar factories was appointed by the Government of India in 1963. And, also a sugar industry commission was appointed to make an enquiry into different aspects of sugar industry and for fixing ex-sugar factory prices. The Tariff Commissin (1969) also made an emphatic recommendation for the improvement of the sugar factories. During the fifth five year plan a new committee under the chairmanship of Shri S.V. Samath was appointed by the Government of India in 1975 to examine the matters relating to economic viability of new sugar factories. "Another important development during this period was the constitution of high level committee under the chairmanship of Sri L.Kumar to study the cost structure of the sugar industry. The commission submitted its report on price policy for sugar cane for the session 1997-98 recommending the statutory minimum price (SMP) of sugarcane payable by sugar factories at Rs. 48.45 per quintal linked to a basic recovery of 8.5 per cent subject to a premium of Rs. 0.62 for every 0.1 per centage point increase in the recovery above that level up to 10 per cent. Table no. 1.4 shows that the next seven year prices.

Table No. 1.4

Statutory Minimum prices of Sugarcane as recommended by CACP and fixed by Govt.

Season (October to September)	Recommended by C.A.C.P.			Fixed by the Government		
	Price (Rs. per Quintal)	Linked to a basic recovery (percent)	Premim (Paise/ quintal)	Price (Rs. per quintal)	Linked to a basic recovery (percent)	Premium (paise/ quintal)
1	2	3	4	5	6	7
1991-92	25.00	8.5	29.41	24.00	8.5	28.24
	26.00*	8.5	30.59	26.00*	8.5	30.59
1992-93	27.00	8.5	31.76	27.00	8.5	31.76
	29.00*	8.5	34.12	31.00	8.5	36.47
1993-94	30.50	8.5	35.88	32.50	8.5	38.24
	34.50*	8.5	40.59	34.50	8.5	40.59
1994-95 A	37.00	8.5	43.53	37.00	8.5	43.53
	39.10*	8.5	46.00	39.10	8.5	46.00
1995-96	42.50	8.5	50.00B	42.50	8.5	50.00
				42.50*	8.5	54.00
1996-97	45.90	8.5	54.00B	45.90	8.5	57.00
1997-98	48.45	8.5	60.00	48.45	8.5	60.00

* Revised.

A A premium of Rs 0.60 per quintal for recovery above 10 percent

B A premium of Rs 0.65 per quintal for recovery above 10 percent

The Sugar export and Import in the last seven year (1991-92 to 1997-98) contained in table 1.5 shows that the maximum export of sugar in years 1991-92 and 1995-96 in 583 tonnes and 887 tonnes and year 1993-94, 94-95, 95-96 in Import are i.e. 460, 674, 42 tonnes.

Table No. 1.5

Season wise production and export, import of sugar and consumption.

S.No.	Year's	Area in million hectare	Production of sugar, in tonnes	Consump-tion in tonnes	Import in tonnes	Export in tonnes
1	1991-92	3.84	13411	11225	—	583
2	1992-93	3.57	10609	12005	—	397
3	1993-94	3.42	9824	11137	460	55
4	1994-95	3.87	14643	11974	674	41
5	1995-96	4.15	16429	13172	42	887
6	1996-97	4.17	12905	13792	—	419
7		3.92	12672	13995	—	350

The cultivation of sugarcane in India is being practiced since ancient times. The earliest refrence about sugarcane are given in the

'Vedas', 'Puranas', and other ancient sacred manuscripts. It's scientific name "Saccharum" was derived from the Sanskrit word, Sarkara. When the Alexender the Great invaded India, in 327 B.C., his scriber recorded that the inhabitants "chewed a marvelous reed, which produced a kind of honey without any help from boes". This was the saccharum barberi type sugarcane which was much hard as well as sweet. Later on, Christopher columbus on his second voyage took a few sugarcane plants and planted on Santo Domingo, from where its spread into the tropical and sub tropical countries of Brazil, Cuba, Maxico.

The area under sugarcane increased from 1.85 million hactares during 1995-96 to 3.92 million hectare during 1997-98. Still sugarcane is being cropped only on 2.1 per cent land of total cropped area. Both hectare age and sugarcane production had touched the record of 3.92 million hectares and 260.16 mattric Tonnes respectively in the year 1997-98 . While, the area under sugarcane during 1990-91 was 1.71 million hectares and the production was 57.05 matric tonnes only. The yield has increased from 33.4 tonnes per hectare during 1950-51 to 66.4 tonnes per hectare during 1997-98.

The following table shows the area, production, productivity and utilization of sugarcane for processing of various products and other consumption purposes during 1991-92 to 1997-98.

Table No. 1.6

Area, Production, Productivity and Utilization of sugarcane

S.No.	years	Area in Million hectare	Production in Matric Tonnes	In Tonnes/ Hect. Productivity	Utilization of sugarcane in Percentage.		
					White sugar	Gur & Khandsari	Seed, Feed & Chewing
1	1991-92	3.84	254.00	66.1	52.76	36.76	10.48
2	1992-93	3.57	228.00	63.8	45.16	42.96	11.88
3	1993-94	3.42	229.66	67.1	42.76	45.44	11.87
4	1994-95	3.87	275.54	71.3	53.57	34.56	11.87
5	1995-96	4.15	281.10	67.8	61.99	26.27	11.74
6	1996-97	4.17	277.25	66.5	47.02	41.12	11.87
7	1997-98	3.92	260.16	66.4	54.50	33.67	11.82

Sources: Directorate of Sugar, Ministry of Food. 2000

The above table 1.6 reveals that the production increased tremendously, but the area and productivity increased with a slow growth rate. The use of sugarcane in processing white sugar also rose from 52.8 per cent during 1991-92 to 54.50 per cent during the year 1997-98. The National Commission on Agriculture (1976) observed that "the sugar requirement in 2000 A.D. will be 18 million

tonnes including the requirement of jaggery and khandsari" for, getting the said requirement, it would be necessary to produce more and more sugarcane.

The major sugarcane growing states in India are U.P. Maharashtr, Tamilnadu, Karnataka, and Andhra Pradesh, Gujrat, Both in terms of area and production, Uttar Pradesh ranks first in the country but its yield level of about 59 tonnes per hectare is still very low as compared to nations average of 66.5 tonnes per hectare It has a disadvantage that its largest area still lie under subtropical zones. Because of lower productivity of these zones and due to climatic disadvantages the national average of sugarcane production always goes down. However, the productivity of Decan states has been found to be very high such as oven 100 per cent increase in the area of sugarcane was recorded in Karnataka, Maharashtra and Tamilnadu during the last two decades over 300 per cent in Gujrat and nominal increase in Andhra Pradesh was recorded. The productivity in Tamilnadu state was noted to be on the top followed by Maharashtra, Karnataka, and Andhra Pradesh. The following Table (1.7) shows the area, production and productivity of the Major sugar cane growing states.

Table No. 1.7

Area, Production and Productivity of sugarcane in selected states during 1991-92 to 1996-97

[Area in lakh hectare, Production in Million Tonnes, Production in Tonnes per hectare]

S. No.	Name of the State	Area, Product & Productivity	91-92	92-93	93-94	94-95	95-96	96-97
1	Uttar Pradesh	Areas (in lakh hect)	23.48	22.37	20.69	21.65	23.75	25.77
		Production (in million Tonnes)	125.17	121.88	119.61	128.07	142.03	151.16
		Productivity (in Tonne per hect.)	57.11	54.48	57.80	59.15	59.79	58.65
2	Mahara shtra	Area	4.53	4.04	3.44	5.18	5.80	5.16
		Production	36.18	30.85	27.89	44.26	46.65	41.80
		Productivity	79.88	76.37	81.06	85.53	80.44	81.02
3	Tamil Nadu	Area	2.38	2.16	2.49	3.28	3.26	2.71
		Production	24.88	23.06	25.99	36.46	32.94	26.93
		Productivity	104.57	106.79	104.22	111.21	101.06	99.37
4	Karna-taka	Area	2.85	2.62	3.01	3.45	3.13	2.55
		Production	24.12	22.48	26.60	33.09	24.02	21.85
		Productivity	84.62	85.80	88.49	95.95	79.56	85.69
5	Andhra Pradesh	Area	2.02	1.71	1.76	2.09	2.14	1.99
		Production	15.06	12.16	13.47	16.04	15.18	14.95
		Productivity	74.54	71.29	76.73	76.70	71.10	75.10
6	Gujrat	Area	1.2	1.27	1.28	1.55	1.62	1.66
		Production	10.24	10.87	10.23	10.79	10.51	11.40
		Productivity	85.19	85.60	79.69	69.71	65.04	68.69

The area, production and productivity of sugarcane during the last five years (1991-92 to 1996-97) in the main sugarcane producing states of our country analysed in the Table 1.7 indicates that the area and production was recorded highest in the Uttar Pradesh in Comparison to all other states. While, the productivity of Sugarcane was recorded to be highest in Tamilnadu and in Uttar Pradesh it was found that the Productivity of sugarcane was comparatively lowest during all the six years in comparison of other main sugarcane producing states. Maharashtra State was found to be the second important state in terms of productivity.

Uttar Pradesh has been divided in five sugarcane producing regions. i.e. western, central, Eastern, Bundelkhand and hill, whille western region was maximum area, production and productivity; Eastern region ranks second. The area under eastern region in 1991-92 was 19.87 lakh hectare and productivity was 57 tonnes per hectare. It cover 24 districts in the State and 44 sugar factories of 122 as in 1997-98. Area under sugar cane was 83 lakh hect. average area per sugar factory was 45159 hect. and 9732 hectare respectively.

Kushinagar is one of the 24 sugar cane growing Districts of Eastern region and 44 sugar cone growing districts of state of Uttar Pradesh as a whole, sugarcane is cultivated in almost entire Kushinagar District and entire sugar cane production is undertaken by Eight (8) Sugar Factories in whole district. i.e. one sugar factory of situated in Ramkola Block, khetan sugar factory and its command area is maximum in Kushinagar Distt. the Analysis of Decade wise

data pertaining to area and production of sugar cane in Kushinagar District of eastern region, since the years 1980-81 to 1990-91 reveals that the area under sugarcane had nominally increased. But the production was found to be increasing which continued during 1985-86 to 1997-98.

The following Table 1.8 shows the area, production and productivity of sugar cane in Kushinagar district during 1991-92 to 1997-98.

Table No. 1.8

Area, Production and Productivity of sugar cane in kushinagar district during 1991-92 to 1997-98.

S.No.	Years	Area in Hect.	Production in Metric Tonnes	Productivity tonnes per hect.
1	1991-92	68095		54.65
2	1992-93	70525		51.20
3	1993-94	71075		52.58
4	1994-95	71125		52.60
5	1995-96	73565		57.60
6	1996-97	70050		56.50
7	1997-98	76560		60.20

The area, production and productivity of sugar cane in Kushinagar district, during the last 7 years. 1991-1992 to 1997-98 reveals that the

area under sugarcane has been increased from 68095 hectares in the year 1991-92 to 73565 hectares till the year 1995-96 and thereafter it was noted to be decreased upto 70050 hectares till the year 1996-97. In the year 1997-98 it has been again found to be increased upto 76560 hect.

Objectives:

1. To findout the cost of production of sugarcane and competitive crops on different groups and different size of sugarcane farmers.
2. To find out crop wise production and income through other sources on the farms of sugarcane growers in the study area.
3. To analyse the pattern of employment on the farms of sugarcane growers.
4. To study the role of Ramkoka Sugar Factory in Poverty amelioration of sugarcane growers in the study area.

Hypothesis :

The sugar factory have played a significant role in increasing the income as well as employment among the poor cane growers of Kushinagar of eastern Uttar Pradesh.

JUSTIFICATION OF THE STUDY

The Genuine reason for undertaking the persent study has been the amelioration of poverty from the poor sugarcane growers of the sugarcane belt of Eastern Uttar Pradesh, Kushinagar is one of the 13 sugar cane growing Districts of E.U.P. and 35 sugarcane

growing districts of the state of Uttar Pradesh as a whole. In this district sugar cane is cultivated in almost entire district. Out of the 8 (eight) existing sugar factories in Kushinagar district the Khetan Sugar factory Ramkola has the highest command area and is situated in Ramkola Block. Ramkola block has also the highest number of poors including marginal as well as small farmers who have been found to be predominant sugarcane growers either due to existence of more number of sugar factories are due to suitable conditions and cropping pattern being followed in the areas. The acute poverty from these poor farmers have still not been erradicated beyond their own utmost efforts and several efforts of the state as well as Central Government. In this district still there are areas from where the transportation of sugarcane produce either becomes costly are difficult to the poor farmers and therefore these poor farmers are compelled either to bear the losses are to sell their produce to the local "Kantas" at low prices which causes very low income from the sale of sugarcane produce by these poor farmers.

Apart from various other reasons for the acute poverty among these sugarcane growers, one valid reason has been the delay in the payment of their dues by the sugar factories and also non payment in many cases till longer duration which decreases the poor farmers to continue cultivation further and as a result of it they suffer heavily and are compelled to remain poor till further generation. They also cannot give up growing sugarcane due to easy ratooning and less cultivation expences particularly in the area of the study. It has also been observed generally that these poor

farmers become unable to compete to large farmers in cultivation, supplies of sugar cane produce to the factory, getting sufficient number of "Purchies" for the supplying their total produce.

This study has been an attempt to findout the cost of production as well as total production of sugarcane along with its competing crops, to findout the income and employment generated on the farms of these poor sugarcane growers, and to assess the profitability of growing sugarcane and income thereof for the amelioration of poverty from these sugarcane growers. This study is useful to provide guidelines to all concerned with the Poverty amelioration and sugarcane development among the poor farmers.

Among the previous several research studies conducted in this regard, the main themes of this study have either been left or not been touched. This research investigation is therefore a diligent task to findout the roles of sugar factories in ameliorating poverty particularly from the poor sugar cane growers who have been the most suffers in the hirarchy of the sugarcane industry.

This study is thus, justified in the context of the poverty amelioration from the poor sugarcane growers as well as the Role of sugarfactories in the sugarcane development of a potential sugarcane areas.

CHAPTER-II

REVIEW & LITERATURE

CHAPTER - II

REVIEW OF LITERATURE

The present chapter deals mainly with the scientific researches done either on the same or concerned problems in the last few years by various research institutions, agricultural universities and other organizations. The main findings and conclusions or suggestions given by the respective authors and researchers for their works are being discussed in a chronological order in the following paragraphs keeping in the view only the valuable findings and suggestions which supports the problem in maximum respects.

Agarwal, G.D. (1955-56) reported that sugar cane accounted for half of the total income of the farms, the average cost of production per maund in the cost accounting method for sugarcane planted was reported to be Rs. 0.86 and that for ratoon Rs. 0.57. The cost of production per maund of sugar cane combined was Rs. 0.72. He further reported that the cost of the production per maund of sugar cane planted and ratoon both decreases with the increase in the size of holdings. The farm business income per acre of sugarcane planted and ratoon was worked out Rs. 231 and Rs. 256 respectively.

Garg and Raghubanshi (1959) conducted a study in Muzaffar Nagar district on 60 holdings, varying from below 5 acre to above 10

acres spreadover 4 villages and found that the cost of production or ratoon crops as well as planted crop come to Rs. 0.27 to Rs. 1.00 per maund including cost of transport. The average cost of productin of sugarcane both planted and ratoon was Rs. 10.87 per maund. The input and output sugarcane and ratoon come to Rs. 1.68 and 1.37 respectively.

Khot, S.M. and Kamala, G.V. (1966) reported that (i) Development of Agricultural processing industry, sugar in the case, has resulted in making sugarcane growing a commercial proposition. (ii) The expension of this processing unit has further led to the establishement and expansion of allied industries. (iii) A net result of (i) and (ii) has been the general economic prosperity of the region which is reflected in increased activities like construction, banking credit, higher education etc. The economic development obviously has created opportunities for new and more job.

Singh, Roshan and Singh Ranbir (1966-67) conducted a study in Muzaffarnagar district of different size of holdings and reported that about 41 per cent of the cane area under sugarcane planted produces about 26 per cent of the total cane production at average yields, below 300 quintal per hectare at an average cost of Rs. 11.50 per quintal. About 28 per cent of the cane area produces about 30 per cent of the cane production at an average cost of Rs. 4.71 per quintal with an average yield of 300 to 400 quintals per hectare, an other 24 per cent of the cane area produces about 32 per cent of the cane production at an average cost of 4.23 per quintal with average yield

of 400 to 500 quintals per hectare and about 7 per cent of the cane area produces 12 per cetn of the total production at an average cost of Rs. 3.50 per quintal with average yields of above 500 quintals per hectare.

Lavania, G.S. (1967-68) conducted a study in Deoria district of U.P. and reveals that in case of sugarcane planted irrigated, the production elasticity of land and bullock labour is found positive and significant while sugarcane planted in ratoon unirrigated give positive and significant values for land variable only. These variables indicate that the production can be increased by increasing their respective quantities. The remaining variables under study for sugarcane planted irrigated and sugarcane planted and ratoon unirrigated do not give significant production elasticities.

Tariff commission (1969) pointed out that sugarcane offered a better returns as compared to other agricultural products. The area under sugarcane has tended to steadily to rise, nevertheless the acreage has not been stable. A 4 year cycle two of reduced area followed by two of expansion, had been the characteristics feature of the sugarcane cultivation.

Shukla, B.D. and Pandey, H.K. (1969) conducted a survey in Varanasi district of Uttar Pradesh and found that the net income per hectare for sugar cane and other crops shows an increasing trend with an increase in the size of the farms. They calculated the cost of production per hectare for all size group as average. The family labour income and farm business income, however, shows a declining trend with the increase in the size of farms.

Jha, Dayanatha (1970) conducted a study in North Bihar which revealed that the response of output may be highly elastic inspite of inelastic acerage response. The role of prices in this changed context is clear. They have to be a such as to encourage adoption of these innovation, their impact would lbe more meaningfully measured in terms of variations in production rather than acerages. This is in total agreement with the inferences drawn by Mellor that in a traditional agriculture price policy has limted role to play as a direct stimulant to output in so far as this increase is supposed to come through expansion in acerage, but it has significant importance in the context of agricultural modernization and technological changes.

Azad, M.P. and Garg, J.S. (1974) reported that the optimum level of human labour should be reduced to Rs. 148.88 By utilizing the optimal level of manures, fertilizers, and irrigation, the production of sugarcane planted per hectare can be increased to 700 quintal against the existing level of production of 552 quintals per hectare; with an additional investment of Rs. 500 on manures, fertilizers and irrigation per hectare, the additional net gain can be of the order of Rs. 1,450 per hectare at the current market rate.

Singh, Brijendra, Singh Ranveer and Singh L.R. (1974) Examined that the yield per hectare of sugarcane crop showed an increasing trend with the farm size because of increasing expenditure on fertilizer, irrigation and interculture operations. The yield per hectare of high yielding varieties of paddy and wheat was

almost the same on the small and medium farms, but was significantly higher on the large farms due to higher use of fertilizer and timely irrigation through their own source on this category of farms. The comparison of sugarcane and paddy wheat rotation, indicated that sugarcane is profitable as compared to paddy wheat rotation on the medium and large farms. On the small farms, the paddy wheat rotations turned out to be profitable because of the depressed yield of sugar cane crop on account of lower level of irrigation application as these farms were handicapped with respect to their own source of irrigation.

Parthasarthy P.B. and Suryanarayana K.S. (1974) reported that diminishing factor returns were found to exist for all the inputs in sugarcane farming in all the size group of farms. It was interesting to note that the production elasticities of land which was significant in North Circars for the totally of farms turned out to be non-significant in respect of farm size, constant returns to scale prevailed on the sugarcane farms in all the three regions except on the small farms in North Circars, where diminishing returns of fertilizers and human labour and an increase in the use of land and cattle labour might contribute to achieved profitability in sugarcane production among different farm size groups. Thus, there exist opportunities for attaining optimal efficiency in sugar cane production through the substitution of resources.

Kumar Praduman (1984) reveals that the industry will bear a loss of 21 per cent of production cost for gur and khandsari and 10 per

cent for sugar. At statutory cane price of Rs 15.79 , the sugar factories will earn a profit of about 4 per cent and gur/khandsari The industry will be economically viable with a maximum of 10 per cent rate of profit if cane prices, range between Rs. 13.39 and Rs. 15.20 for gur between Rs. 12.90 and Rs. 14.80 for khandsari and between Rs. 14.14 and Rs. 16.87 for sugar factories. Such a type of cane price structure is not remunerative to the cane growers.

Sethi, A.S. and Kanwar R.S. (1987) examined that the compound growth rates in each of sugarcane acerage, production, productivity and crushed cane price, number of mills, recovery and sugar production in India were positive and directly corelated with the corresponding variability, except recovery all the characters were inter corelated, the farmers bearing no association with others. Acerage was found to play the most important role in increasing cane production where as cane price accompanied by acerage did so in magnifying revenue from the crop. Present crushing production and acerage of sugarcane were the key variables with relative importance (in per cent) of 44.39 and 17 respectively for precisely redicting sugar production in the country.

Lal, Jagdish (1987) reported that, the major factors significantly and positively influencing sugarcane area in different districts of Uttar Pradesh were found to be the farmers, own adjustment lags in area (their previous year cane acerage) relative sugarcane profitability, rain fall during sowing mouths and time trend. The study suggests that the price of competing crops must be

taken in to account; evolving suitable price structure for sugarcane. Secondly, the risk arising out of price fluctuations need to be minimised. Thirdly, the study suggests that if the farmers of the area assured of irrigation facilities from canal or other sources, there is great scope for increasing cane area in spite of low rainfall in pre planting period.

Pandey V.K. and Tewari, S.K. (1988) conducted a study for cost functions and economic yield gaps in sugarcane production. For this purpose, the sample cane growers were grouped into three broad classes of best, progressive and backward, based upon distinct yield ranges and input use observed on the sample. The best farmers were classified as those having sugarcane yield above 750 at a 1/ha. progressive as having yield between 500 to 750 at 1/ha and backward has having yield level below 500 at 1/ha. It is observed that the best sugarcane growers are fairly closed to the most efficient economic yield level of 925 at 1/ha. Such farmers constituted only 20 per cent of the total sample. However, the economic yield gaps in the progressive and backward categories of sugar cane growers are conspicuously very high, being 317 and 522 quintals/ha respectively which from 34.3 per cent and 56.4 per cent of the economic potential yield.

Waghmare P.R and K.V. Deshmukh (1988) examined the trends in area production and yield of sugarcane in the district of Marathwada region, Marathwada and Maharashtra state. The result of the study revealed that the trends in area, production and

productivity of the crop were positive and significant in the case of all districts, Marathwada and Maharashtra state for the period 1960-61 to 1981-82 the changes were at a faster and higher rate during the seventies (1970-71 to 1979-80) then in the sixties. The interesting conclusion of the study was that the shift in the average area, production and productivity of sugarcane was dramatic after 1974-75 on wards for all the districts, region and the state but the growth rates of yield were lower as compared to the earlier period, i.e. 1960-61 to 1973-74.

Kasar D.V. and S.N. Tilekar (1989) brought out that the sugar industry has significant impact on the employment of seasonal migrants in employment of seasonal migrants in Maharashtra. The share of sugar factory employment was to the extent of 45.51 and 75 per cent in total employment of an average male female, and bullock pair of the migrant house holds. As regards the income it is noted that the sugar industry, on an average contributes 57 per cent of the gross income of migrants households. The seasonal employment provides by the sugar industry enable the migrant households to increase their income to enjoy; a slightly better position as compared to the non-migrants under the study. The study therefore, endroses the policy for the installation of agro processing industries based on local raw products in rural areas in order to generate employment and income opportunities for the economic development of weaker section in particularly and the farming community in general in the country.

Raghuram, P. and et al. (1989) conducted a study in Andhra Pradesh and revealed that the costs and gross returns of paddy for kharif and Rabi were clubbed to arrive at the net income, for a gross hectare , which stood at Rs 7952 against Rs. 11,658 in sugarcane. The other determining factors for the performance of sugar cane were the input supplies to the extent of 60 per cent of operational costs and arrangement of labour for cutting of sugarcane by the factory, price certainty and prompt payments. Though sugarcane is the profitable in the area, in the absence of sugar factory, it would not have attracted the attention of the farmers as revealed by the study. Conversely the response of the cultivators also made it possible for the factory to make positive growth in all its spheres of activities.

Singh, V.N. Julkar, A.M. and Nema, M.G. (1989) brought out that the sample farms under the factory command earned one and a half time higher farm income of which sugarcane accounted for a major share as compared to those out side the factory command area during the same period. It was also observed that the sample farms of Dabra Sugar Mill command area have 30 per cent higher human labour employment .

Tayab - MAK - 1990

It is demonstrated that the revenue generated by sugarcane by products in India is typically only about 1.6% of that from the sugar produced; to improve their economics , sugar factories should seek high value co products to (at least partly) replace the cheap byproducts now produced. Steam explosion of depitched bagasse

could give rise to 3 products which together could be more valuable than the concomitant sugar: cellulosic fibre of almost rayon grade quality; hemicellulose, which could be hydrolysed to give raw material for fermentation to ethanol; reactive liginin, usable e.g. as an adhesive in fibre boards. The problems remains that the capital investment required would be up to 7 x the cost of an ordinary sugar factory.

Tiwari R.; Dheer D.P. (1992) :

This paper looks at the cost of cultivation of sugarcane plant and ratoon crops. Village pitaunjihia in the area of the Riga Sugar Factory in north Bihar was chosen for this study. 40 farmers were selected at random for crop season 1988/89. A detailed breakdown of the cost structure is given the level of investment in both the plant and ratoon crop of sugarcane is rather low. To increase the productivity of the sugar cane area; higher input is suggested . The cane development agencies of the state, sugar factories and other lending institutions may play a vital role in accelerating production. The lending institutions have little risk to Face since the crop goes to sugar factories , where it is easy to adjust the loan against the cane price given to the cultivator.

Harpal Singh; Singh G.N.; Senger S.D.S., Singh R.I. (1993):

The sugar industry is important to the agricultural economy of Bijnor District; Uttar Pradesh; India. This study examines its profitability in relation to its production and marketing for the agricultural year 1988-89 and assesses the economics of sugarcane

production in the area; the marketing of sugarcane and the problems of production and marketing of sugarcane. Results indicated that the cost of production per hectare of sugarcane was higher on the large farms, resulting in higher yields of sugarcane. The cost of production per quintal of sugarcane was found to be low due to higher yields in relation to the cost of cultivation. Most produces to be low due to higher yields in relation to the cost of cultivation. Most producers supply their sugarcane direct to the sugar factories or crushers.

Chauhan, P., Pratap Singh Chauhan (1993) :

An opinion survey of managers and workers at cooperative sugar factories in Gujrat identified the main problems as : purchase tax on sugarcane based on its price; shifts in Government policy on licensing of sugar factories ; Shortage of sugarcane, particularly in the saurashtra zone, because private gur and khandsari units start processing earlier and deprive the factories of raw material; premature burning of sugarcane by growers; molasses storage and distribution; effluent disposal and by product utilization; delay of cane payment; sudden breakdown of Factory maching low sugar recovery per hectare; high sugar cane production cost; lack of sugarcane development. It is concluded that more distilleries should be set upto the utilize all the molasses produced by sugar factories and khandsari units, with subsequent manufacture of value added products based on alcohol; at present only 2.2 of 3 mt. molasses annnually produced is used properly.

More efficient fuel use of bagasse could release some for making paper and card board. The Narmada project will supply saurashtra with enough water to extend the area of sugarcane cultivated with proper irrigation.

Soloman-S; Wilson- JR (ed); Hogarth DM (1996):

The first article (pp-9-11) Focuses on the production constraints facing the indian sugar industry if it is to raise sugarcane production to meet the estimated annual demand of 320 mt. by the year 2000. Various constraints are discussed regional imbalances inproductivity, high cost of cultivation, fluctuation in Sugarcane area, lack of suitable varieties for saline, alkaline and water logged condition, lack of early maturing high sugar varietes, low sugar recovery, low productivity opratoons, and lack of suitable pricing and marketing policies. The second article (pp. 12-14) briefly highlights the major thrusts of national sugar policy which are needed to meet production requirement. These are : varietal improvement, improvement in crop management improvements in yield and recovery and prevention of postharvest losses, development of an efficient marketing system and appropriate policies on pricing, buffer stocks, licensing, import/Export regulation and decontrol establishment of energy efficient sugar factories and by product development.

Patil H.N.; Hinge B. (1996):

Economic growth lis linked to the way in which consumers spend their income, particularly when income increase. The impact

of the sugar industry on the standard of living for sugarcane growers in Western maharashtra, India, is examined. A survey was undertaken at a typical sugar factory in sangli. The 126 Sugar growers selected for the study were classified into small, medium and large scale producers. Data were collected over a five year period. Expenditure was examined for nine categories of essentials (housing, education, medical aid, marriage, guests, gifts, fairs litigation, and Insurance); and for ten categories of luxury goods (Car, Motorcycle, Scooter, Radio, Cycle,Wrist watch, furniture, ornaments, recreation and gas). As an average for the three size groups. for essentials the most was spent on motorcycles, ornaments and cars, respectively. Investment in share in the sugar factory and the village cooperative society and land development bank have increased substantially.

Mahadeviah D.; Krishna K.S., Krishnamurthy,B., Srinivas B.V. (1997):

The study was conducted in K.M. Doddi sugar Factory area of Mandya District in Karnataka during 1993-94 to examine the adoption behaviour of sugarcane growers. One hundred and thirty sugarcane growers were interviewed personally with the help of a pre-tested interview schedule. Over 70% of lrespondent had adopted simple and low cost sugarcane cultivation practices. Over 60% expressed lack of technical know-how, non-availability of inputs, and high cost of inputs, and high cost of input as reasons for non-adoption of recommend sugar cane cultivation practices.

Gehlawat - J.K. (1998) :

Sugar production in India tends to undergo large cyclic fluctuations every third or fourth year. Partly due to the use of out dated technology for the industry to survive against international competition, new development must be encouraged, aimed at improving factory efficiency and product quality. With the rising capital cost of large equipment, it is desirable to construct mini sugar factories and to modernize traditional khandsari units. With innovative technology. The main recent development in small scale processing of sugarcane are cane separation (splitting with separation of third, wax juice and residual pith). and juice purification using membrane technology. These processes are described and typical results are quoted; they should make processing only 500-1000 t cane /day variable. l

Murthy PSR (1999):

A study was conducted in 1996/97 to determine the profitability of sugarcane cultivation in west Godawari district, Andhra Pradesh, India. A sample of so farmers was selected from each of the three sugar factory areas in the district. Cost of cultivation, price paid by factory, profit earned by Farmer and sugarcane cultivation problems are reported . Comparisons are made between the two private sector sugar factories and the cooperative sugar factory.

CHAPTER-III

RESEARCH METHODOLOGY

CHAPTER-III

RESEARCH METHODOLOGY

This Chapter deals with the method applied in the persent study to cover the main objectives and approve the hypothesis put in this research study. This chapter also includes the sampling design in which the details about the selection of area and ultimate samples. It also includes method of investigation of both primary and secondary information; method of analysis and reference period which are detailed in the following paragraphs.

Method of Study:-

The persent study has been confined mainly to the Khetan Sugar Factory Ramkola in Kushinagar Distt of Eastern U.P. . Empirical data have been collected form the sample sugarcane growers belonging to the command area of the Sugar Factory categorising in to two distinct categories i.e. (1) Factory sugarcane growers and (II) Non Factory Sugarcane growers, where in the factory Sugarcane growers are those farmers who produce sugarcane for sugarcane factory only and the non factory sugarcane growers are those farmers who produce Sugarcane but do not sell to the sugar factory. The primary data have been collected with the help of specially prepared and pretested schedules and questionnaires through the personnel interviews of the sample sugarcane growers. The secondary data have been collected from the avialable reconds of the sugar factory and from the district, block and

other sources. The data pretaining to the cost, production, employment, generated, income and opinion and views of the farmers as well as concerned officers of the area under study have also been collected. The income from the sale of crop produce and other sources along with the opinion & suggestions for development of sugarcane cultivation have also been included in this reasearch investigation.

II. Sampling Design:

The sampling technique applied to this study has been a two stage stratified random sampling at the first stage the Khetan Sugar Factory situated in Ramkola block of Kushinagar distt. newly formed distt in 1994 in Gorakhpur divison in U.P. Since the Khetan Sugar Factory Ramkola has been situated in the Ramkola block of Kushinagar distt. The Ramkola development block have been selected for the purpose of in depth study. From Ramkola block, thus selected two types of farmers have been selected to find-out the impact of sugar factory on the Poverty amelioration from the sugarcane farmers. The first category of farmers has included the farmers growing sugarcane for the factory only, the second category of farmers includes the farmers growing sugarcane but not selling to the sugar factory. Further, since, the majority of farmers come under the categories of marginal as well as samll farmers who are poors also, the ultimate samples for the in depth study have therefore, been undertaken from these two categories of poor farmers to findout the role of the sugar factory in ameliorating poverty from the poor farmers. Thereafter, since majority of poor farmers have been growing sugarcane for the factory only the

maximum samples have been undertaken from this categories and the remaing other category to assess the inpact. Thus in all hundred sample sugarcane growers have been undertaken from the Ramkola block of which 70 from the category of the sugarcane factory growers and 30 from non-sugar factory growers from the poor sugarcane growers belonging to (1) Marginal sugarcane growers (below one hectare) and (ii) Samll sugarcane growers (1 to 2 hectare) randomly according to probability proportion to the total number in each catgory. The sampling design comprising the total number of samples has been given in Table- III-I.

III. Method of Investigation:

(A) Collection of Primary Data

The primary data have been collected by survey method with the help of specially prepared and pretested schedules and questionaires by personnel interview of the sample sugarcane growers including all the aspects of the requried data such as area, production cost of production, employment days, cropping pattern followed, income from the Ssale of produce and through other sources have also been collected from the selected sugarcane growers.

(B) Collection of Secondary date:

The requried secondary data pertaining to all the aspects of sugar factory have been collected from the available records of the factory. The secondary data relating to area, production and productivity of the crop have been collected in the command area of the factory in the Ramkola block from the available records. The data pertaining to

national as well as state level have also been collected to cover the objectives of the study.

4. Method of Analysis:

A-part from the simple mathematical analysis, some specific statistical analysis have also been done to analyse the cost of porduction of sugarcane and its competiting crops, their input -output ratios, income from the sale of crop produce as well as other sources, emplyment days earned from various sources on the farms and outside the farms, frequency distribution has also been done to findout the extent of the opinions and views of the farmers and others concerned and about the problem faced by the sample sugarcane growers of the area under study.

5. Refrence period:

The refrence period for this study has been the agricultural year 1998-1999.

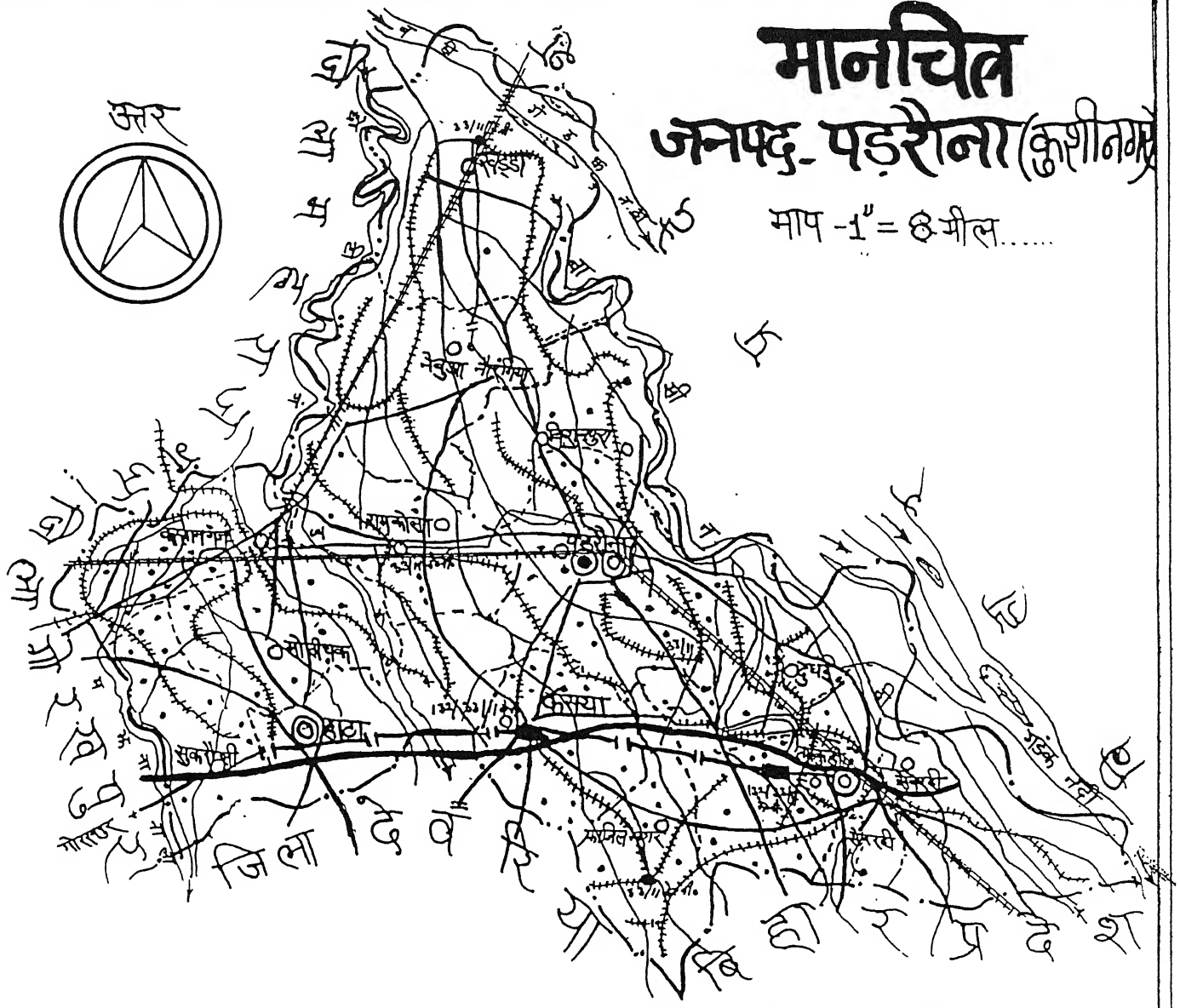
CHAPTER-IV

GENERAL DESCRIPTION OF THE TRACT

मानचित्र

जनपद- पड़रौना (कुशीनगर)

माप -1" = 8 मील.....



क्र.	विवरण	चिन्ह	क्र.	नहरें	
1.	नदी		10.	राष्ट्रीय मार्ग	
2.	प्रदेश की सीमा		11.	जिला मार्ग	
3.	जनपद की सीमा		12.	नलकूप संख्या 139	•
4.	तहसील की सीमा		13.	132 के.वी. लाइन सब स्टेशन सहित	
5.	विकास खण्ड की सीमा		14.	33 के.वी. लाइन सब स्टेशन	
6.	जनपद मुख्यालय	◉	15.	11 के.वी. लाइन	
7.	तहसील मुख्यालय	◎	16.	रेलवे लाइन (मीटर गेज	
8.	विकास खण्ड मुख्यालय	○			

यथावत्

(यशवन्त कुमार श्रीवास्तव)
(कार्टो० असि०)
कार्या० अर्थ एवं सांख्यिकारी
पड़रौना (कुशीनगर)

(सल्लू प्रसाद)
अर्थ एवं सांख्यिकारी
पड़रौना (कुशीनगर)

CHAPTER - IV

GENERAL DESCRIPTION OF THE TRACT

This chapter mainly denotes the general particulars of the selected district as well as selected blocks for the present study.

According to myths it is told that District Kushinagar was founded by "Kush" son of Maryada Purshottam Sri Rama. Here the dominant caste is "Malla" represent himself as a "Chndraketu Mall" son of Sri Lakshman. The details information of historical aspects is obtained from the 'Boudha grantha', Divya-vadan', Dieghnikaya, and other information regarding this is also received lthrough travellor description like eight edict of emperor Ashoka, Ewan Chung and Fuyan etc. In the six centuary B.C. instead of 'sixteenth Mahajanpada', their was independent 'Malla' democratic republic in the territory of India. The capital of Malla republic as 'Kasia' which is also known as Kasia, Kushinara and Kasya, after some time Malla republic devided in two internal community which was known as the 'malla of kushinara' and the Malla of Pawa (Padrauna).

Two Km. away from Kasia towards western the excavation of 'tilla' was done in the direction of Cannigham in the year of 1876, which was eminent archeologists. After excavation of 'tilla' some resdiue was found which is related to the statue of Gatum Bhdha and due to this reason the name of district Kushinagar is subjected to historical importance. After excavation and research done by

archeologist, they conclude that 'Malla' empeor during that time is well developed.

GEOGRAPHICAL SITUATION

This district is located between the parallels of 83° 25' to 84° 30' in eastern longitude and 268 49' to 278 50' Northern latitude in the deep eastern part of Uttar Pradesh in Gorakhpur division. The altitude of this district is about 215 feet above the sea level. Total Area of kushinagar district is 2873.5 sq. kms. This district is seprated by Bihar state by attendent river of "Gandak" called 'Basi', in northern & northerneast side. This district is bounded by Bihar state and Deoria dist. in South & western side. The boundary of Kushinagar district in western direction is surrounded by district Gorakhpur and north-western area is also covered by newly established district Maharajganj.

RIVERS

The only one river which flows in district Kushinagar is Gandak and the other branch of that river is Basi. This river works as a demoraction line between district Kushinagar of U.P. and Bihar state. Basi river flows in eastern side of dist. Kushinagar which extands upto the distance of 210 km.

Infacts, during rainy season this area is designated as highly flooded prone area. The dam which is made on 'Kaliganga' river in Nepal is the root cause for being flooded prone area, because they leave water all of sudden when the collection of water is more in dam.

FOREST :

There is no any forest in district Kushinagar, how ever the area stands for horticultural plants, garden and shribs is 40% to total area of district. Kushinagar, among all the plants. Main plant is in aboundant ways is used as building wood such as sheesham; Sogaon etc. and horticultural plant suchas mango, jack-fruit and litchi etc.

CLIMATE :

The climate of this district is generally moderate and the rainy season begins in the second week of June and till the beginning of first week November. Winter commences from the middle of October goes upto the March. April, May and June are the hot month, the maximum temperature range between 40°C – 45°C and minimum temperature ranges between 6.5°C to 7.3°C. throughout the year.

RANIFALL

The maximum average rainfall in the district was about 1303 mm in the year 1993-94 and 1995-96 and the minimum was 917 mm in the year 1994-95 so the year 1994 was known as drought year. The rain was very uncertain and erratic. Mostly rain occurs from 15th june to last week of October. The following table 3.1 shows the distribution of average annual rainfall during last seven year from 1991-92 to 1997-98.

Table - 3.1

S.No.	Years	Rainfall in m.m.
1	2	3
1	1991-92	1205
2	1992 - 93	1180
3	1993-94	1303
4	1994-95	917
5	1995-96	1303
6	1996-97	1327
7	1997-98	1390

ADMINISTRATIVE DIVISION

The district Kushinagar has four tehasils viz-Kasia, Pardauna. Hata & Tomkuhi and foruteeth block such as 1. Kaptanganj, 2. Ramkola, 3. Motichuk, 4. Sukranli, 5. Hata comes under Hata tehsil, 6 Khadda 7 nebua Naurangia, 8. Vishunpura, 9. Dudhahi & 10 Padrauna in Padrauna tehsil, 11 Kasia and 12 Fazilnagar in Kasia tehsil and 13 Tamkuhi, 14 Sevarahi block in Jamkuhi tehsil. Hata is largest tehsil and Kasia is the smallest tahsil.

Economic Development

(a) Population :-

Distribution of population in Kushinagar district according to religion in table 3.2

S.No.	Religion	Population			% in total population
		Rural	Urban	Total	
1	Hindu	1591313	83970	1675283	74.93
2	Muslim	530715	24555	555270	24.83%
3	christian	806	95	901	.04
4	Sikha	———	269	269	.01
5	Budhist	3458	44	3502	.16
6	Jain	308	67	375	.02
7	Others	141	.....	141	.01
	Total	2126741	108164	2235741	100%

Source - District statiscal officer.

Block wise literacy pattern of Kushinagar

Table No. : 3.3

Sl.No	Year/Develop area	Educated person			Percentage of Education		
		Male	Female	Total	Male	Female	Total
1		2	3	4	5	6	7
Year	1971	0	0	0	.0	.0	.0
Year	1981	0	0	0	.0	.0	.0
Year	1991	447267	117318	564585	49.5	13.9	32.3
1	Kaptanganj	31393	7446	38839	52.7	137	34.1
2	Ramkola	31667	7009	38676	50.4	12.1	32.0
3	Motichuk	27832	6040	3392	52.3	11.8	32.5
4	Surauli	30234	6717	36951	55.8	12.9	34.8
5	Hata	31535	8967	40502	57.8	16.8	37.6
6	Kauda	21657	4011	25668	35.1	7.4	22.2
7	Nebug Naurangia	27016	5261	32277	48.5	10.4	30.3
8	Vishnupura	28150	6013	34163	44.6	10.6	28.5
9	Padrauna	47944	12312	60256	49.9	14.0	32.7
10	Kasia	20993	5520	26513	55.3	15.2	35.7
11	Dudhahi	25119	4424	29543	36.0	6.8	22.0
12	Fazilngar	30493	9249	39742	55.6	16.7	36.0
13	Tamkuhi	24603	10287	44890	52.0	15.3	33.5
14	Sevarahi	24232	5405	29637	37.3	8.6	23.1
Total Rural		412968	98661	511629	48.3	12.3	30.8
Total Forest Area		-	-	-	-	-	-
Urban		34299	18657	52956	72.1	46.3	60.3
Total District		447267	117318	564585	49.5	13.9	32.3

Sources - District statiscal officer

Details of district Kushinagar

Table No. : 3.4

S.No.	Particulars	No.
1.	Geographical area in sq· Km.	2873.5
2.	Tahsil	4
3.	Development block	14
4.	Town	7
5.	Villages	1620
6.	Gramsabha	944
7.	Nayayapanchait	140
8.	Electrified village	- 1006
9.	Nager Palika	1
10.	Notified area	2
11.	Commercial Bank	42
12.	Gramin Bank	54
13.	Co-operative Bank	54
14.	Net cultivated area	113000 Hect.
15.	Hospitals	51
16.	Junior basic school's	1136
17.	Senior scondary schools	57
18.	Post graduate college	6
19.	Length of Irrigation channel	1491 Km.
20.	Number of Tubwells	2952

AGRICULTURAL DEVELOPMENT

Agriculture holds an important place in the economic development in this district, and about 80 percent of its population depends on it. Kushinagar has been famous for the Cultivation of Sugarcane. Presently, it is most progressive district for the production of Fruits, vegetables alongwith the wheat, Paddy, Potato, Maize and Banana, Mango, Lichi.

(A) Land Utilization

Land utilization statistics of Kushinagar for the year 1993-94 is given below in the table No. 3.5

Table - 3.5

S.No.	Classification	Area in hectares
1.	Irrigated	186000
2.	Unirrigated	30000
3.	Net Cropped area	216000
4.	Area under double cropped	116000
5.	Non cultivated area	302520
6.	Land use other than agriculture	335576
7.	Garden and other frees.	536
8.	Pasture	504
9.	Permanent Baren Land	8486

Source :- District statistical office Kushinagar

Cropping Pattern

The following table shows that the net sown area under different crops in block wise in Kushinagar District during 1993-94.

Table No. 3.6

S. No.	Blocks	Crop wise Area in hectares				
		Paddy	Wheat	Sugarcane	Maize	Pulses
1.	Kaptanganj	16596	7791	5072	56	480
2.	Ramkola	16715	8258	6125	214	696
3.	Motichack	14199	6821	4599	100	337
4.	Sukrauli	15061	6660	3719	53	345
5.	Hata	15051	63116	4056	145	418
6.	Khadda	14006	5885	8614	60	735
7.	Nebuua Navrangia	10853	5399	7737	72	624
8.	Vishunpura	12716	5795	9151	182	605
9.	Padrauna	19702	9279	7614	331	756
10.	Kasia	12267	4664	4256	138	400
11.	Dudhahi	18917	10562	5980	631	579
12.	Fazilnagar	19862	8830	1229	311	722
13.	Tamkuhi	13452	7130	1348		647
14.	Sevrahi	26522	9170	1325	1201	564
	Total	225919	102497	71075	4230	7950

(C) **Crop rotation adopted**

Paddy	—	Wheat + Mustard
Maize	—	Sugarcane + Mustard
Paddy	—	Potato – Sugarcane
Paddy	—	Wheat + Sugarcane
Paddy	—	Sugarcane – Wheat
Sugarane	—	Wheat – Ladyfinger

(d) **Prominent varietes used under various crop**

Table - 3.7

Crop	Varieties
Paddy	Jaya, Saket-4, Seata, Mahasuri Pant-4, Sarju-52, Basmati-370, Type-3,4, Ratna, Govind, Pusa Basmati
Wheat	R.R.21, Arjun, Janak, U.P. 262, Shera, Deshi Varieter.qq, PBW 343
Sugarcane	CoS-767, Co-Lvck-8102. CoJ-64 Bo-91, CoS-95255.
Pea	Type-19, Type-163, Cocal varietes
Maize	Naween, Surya, Junpuri sweta, Kanchan
Potato	Kufrichandramukhi Kufrikuben.

(E) **Live Stock :-**

The following table 3.8 indicates the number of livestock in the Kishunagar distt. according to census - 1993-94.

Table - 3.8

S.No.	Classification	Number
1.	Total Number of cows	217640
	(a) Cross breed	27539
	(b) Desi	190101
2	Total number of Buffaloes	137500
3.	Total Sheeps	8032
	(a) Cross breed	365
	(b) Desi	7667
4.	Goats	285630
5.	Horse & mule	476
6.	Totall Pig	8032
	(a) Crossed	3536
	(b) Desi	23966
7	Pultry	228469
8	Other Animals	58349

INDUSTRIAL DEVELOPMENT WITH REFERENCE TO SUGAR FACTORY

Under the activities of sugarcane development, Rai Bahadur Rai Khetan sugar mill was established in year 1932-33 in the Ramkola block of Kushinagar district which was the second established sugar mill Deoria district In 1979 Khetan sugar mill was under taken by U.P. sugar corporation. The maximum crushing capacity of the sugar factory was 791.5 mattric Tonnes per year. The first crushing season of this sugar factory was started in the year 1937-38. 97 village of this district have been brought under the command area. This sugar factory covers about 16 Km. (14687 Hect.) area.

Strength of the factory employees during the last year 1997-98 is given in the table- 3.9

Table 3.9

S.No.	Classification	Numbers
I.	Permanent worker	3000
II.	Seasonal permanent worker	410
III.	Casual labours	65
IV	Daily wage labours	430
V.	Administrative	10
	Total	1215

Source _ Office of the Sugar Factory Khetan

Expenditure of Sugar Factory per year (1997-98) in lakh Rs.

1.	Staff	—	373.80
2.	Construction	—	10.92
3.	Packing material	—	27.79
4.	Diseals & Electricity	—	39.65
5.	Bank Interest	—	23.06
6.	Insurence	—	2.00
7.	Administration	—	6.9
8.	Other	—	1.83

CHAPTER-V

ANALYSIS OF THE DATA, RESULTS AND DISCUSSION

CHAPTER - V

ANALYSIS OF THE DATA, RESULTS AND DISCUSSION

The present chapter mainly deals with general details of samples, distribution of family size, work -force in the households, land use pattern on the sample farms, cropping pattern followed on the farms, cropwise fixed & variable costs of major crops grown on per farm and per hectare basis crop wise total cost and production on per hectare basis with input output ratio, total crop production and income from other sources on the sample farms and opinion and views of the sample farmers regarding, problems in the production of sugarcane in the area under study. The results o this study have been analysed and discussed in the following paragraphs :

General Details of the Sample Sugarcane growers :

General Details of the Sample Factory Sugarcane Growers in Ramkola block :

The category wise general details of sample factory sugarcane Growers of Khaitan sugar factory RamKola, distt. Kushinagar analysed in Table V-I. indicates that the average area under sugarcane has been estimated to 0.52 hectare. While the average cultivated area per farm of the sample sugarcane grower has been estimated to 0.82 hectare. Thus, on an over all average 63.41% f the total cultivated area has been covered under sugarcane on the farms of factory sugarcane growers which clarifies that the factory sugarcane growers have diverted more them 50% of their total cultivated area under sugarcane. The related data are given in table -V-I.

Table -V-1

Details of Category-wise Factory Sugarcane Growers of Khetan Sugar Factory, Ramkola. Distt. Kushinagar. [Area Per Farm]

Area Per Farm

S.No.	Category of Sugarcane growers	No. of samples sugarcane growers	Owned Area in Hectare	Cultivated Area in Hectare	Sugarcane Area in Hectare	Percentage of Area under Sugarcane to total cultivated Area.
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	50	0.55	0.54	0.34	62.96%
2.	Small Sugarcane Growers (1 to 2 Heatare)	20	1.53	1.50	0.96	64.00%
3.	All Sugarcane Grower's	70	0.83	0.82	0.52	63.41%

General Details of the Sample Non-Factory Sugarcane Growers

While the categorywise general details of sample non-factory sugarcane growers of Khetan sugar factory Ramkola, Kushinagar analysed in Table-V-II shows that the non-factory sugarcane growers have devoted about 46% of total cultivated area under sugarcane on an over all average. In case of marginal sugarcane growers the coverage under sugarcane has been higher in comparison of small sugarcane growers. While the average area under sugarcane perfarm has been higher on the farms of small sugarcane growers. The lower coverage under sugarcane in case of non-factory sugarcane growers obviously indicates that there is clear impact of sugar factory, on the allocation of area under sugarcane by the farmers. The related data are given in Table -V-II.

Distribution of Family size of Factory Sugarcane Growers

The categorywise distribution of size of family of the sample factory sugarcane growers of Khetan Sugar Factory Ramkola. Analysed in table-V-III, indicates that the average family size of the households of the factory sugarcane growers has been estimated to be seven (7) per household. The average family size among the marginal factory sugarcane growers has been Eight (8) while the average size of the small factory sugarcane growers has been only six (6) per household which clearly shows that the size of the family has been found to be smaller in case of small sugarcane growers than marginal sugarcane growers on the other hand the average numbers of males as well as females per household has been estimated to be 2(two) only and the

Table -V-2

Details of Categorywise Samples Non-Factory Sugarcane Growers of Khetan Sugar Factory Ramkola. Block Distt. Kushinagar.

Area Per Farm

S.No.	Category of Sugarcane growers	No. of samples sugarcane growers	Owned Area in Hectare	Cultivated Area in Hectare	Sugarcane Area in Hectare	Percentage of Area under Sugarcane to total cultivated Area.
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	20	0.57	0.56	0.29	51.78%
2.	Small Sugarcane Growers (1 to 2 Hectare)	10	1.56	1.49	0.60	40.26%
3.	All Sugarcane Grower's	30	0.90	0.87	0.40	45.97%

Table - No.V- 3

Category-wise Distribution of Size of family of the Samples Factory Sugarcane Growers of the Command Area of Khetan Sugar Factory Ramkola. Distt. Kushinagar

No. of Members per Households

S.No.	Category of Sugarcane Growers	No. of Samples	Size of the Family			
			Male	Female	Children	Total
1.	Marginal Sugarcane Growers (Below 1 Hectare)	50	2.40	2.16	2.98	7.54
2.	Small Sugarcane Grower's (1 to 2 Hectare)	20	2.00	1.75	2.65	6.40
3.	All Sugarcane Growers	70	2.28	2.04	2.88	7.20

number of children per hosehold has been three(3) in the cases of factory sugarcane growers households thus there has been preponderance of children the household of both marginal as well as small sugarcane growers. The family has also been found to be large on an average. The related data are given in table-V-3.

Distribution of family-size of Non-Factory Sugarcane Growers :

The category wise distribution of size of family of the sample non-factory sugarcane growers of Khetan Sugar Factory Ramkola. Kushinagar analysed in table V-4 indicates that the average number of family members per household, has been estimated to about ? While in case of marginal sugarcane growers it has been only 7 per household, the average number of males as well as females has been estimated to be 3 per household. While the average number of the children per household has been three (3) in case of non-factory sugarcane growers. Thus, the average family size of non-factory sugarcane growers has been found to be larger than the family size of factory sugarcane growers the average number of males and females per household has also been larger in case of non-factory sugarcane growers. The related data given in Table-V-4.

Distribution of work force in the households of the factory sugarcane grower :-

The categorywise distribution of work force in the household of sample factory sugarcane growers of the Khetan sugar factory Ramkola analysed in table V-5 shows that the total number of workers per household has been estimated to 4.1 on an average, while the average

Table - No.V- 4

Details of Category-wise Distribution of Size of family of the Samples Non Factory Sugarcane Growers of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

No. of Members per Households

S.No.	Category of Sugarcane Growers	No. of Samples	Size of the Family			
			Male	Female	Children	Total
1.	Marginal Sugarcane Growers (Below 1 Hectare)	20	3.05	2.10	2.60	7.75
2.	Small Sugarcane Grower's (1 to 2 Hectare)	10	3.00	2.60	1.80	7.40
3.	All Sugarcane Growers	30	3.03	2.66	2.33	7.63

number of farm workers in the households has been found to be 2.64 per household and the average number of non farm worker has been found to be 0.58 per household. The average number of hired worker per household has been estimated to 0.85 per household. The number of total worker per household has been higher i.e. 4.42 per household among the marginal growers against 3.30 per household among the small sugarcane growers. Thus, the number of workers per household has been higher on the farms of marginal growers in comparison of small sugarcane growers. Among the small sugarcane growers, the number of non farm workers has been found to be nill and among farm workers only male workers have been reported on the farms. While among the marginal growers the females and children have also been reported as farm workers in the area under study. The related data are given in table-V-5.

Distribution of work force on the household of non-factory sugarcane growers :

The categorywise distribution of work force in the households of sample non-factory sugarcane growers of Khetan sugar factory Ramkola. Distt. Kushinagar analysed in table V-6 shows that average number of total workers per household has been estimated to 4.40 per household. While the number of farm workers has been estimated to 2.66 per household of which 1.73 have been males and 0.83 females. The average number of non-farm workers has been estimated to 1.13 per household of which the maximum i.e. 0.76 have been males, 0.30 females, and 0.06 children. The average number of hired workers per household has been estimated to 0.60 of which 0.33 have been

Table No. V-5

Category-wise Distribution of Work Force in households of Samples Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

No. of member of per households

S.No.	Category of Sugarcane Grower's	No. of Samples	Work-Force								Hired Worker's			Total Workers
			Farm-Worker				Non Farm Worker's				Casual	Permanent / Annual	Total	
			Male	Female	Children	Total	Male	Female	Children	Total				
1.	Marginal Sugarcane Grower's (0 to 1 Hec)	50	1.60	1.48	0.26	3.34	0.72	0.10	-	0.82	0.08	0.16	0.24	4.42
2.	Small Sugarcane Growers (1 to 2 Hec)	20	0.90	-	-	0.90	-	-	-	-	1.50	0.90	2.40	3.30
3.	All Sugarcane Growers	70	1.41	1.05	0.18	2.64	0.51	0.07	-	0.58	0.48	0.37	0.85	4.10

permanent workers and 0.27 has been casual workers. On the farms of marginal growers no hired workers have been reported and on the farms of small growers non-farm workers have been reported. The number of total workers have been comparatively higher i.e. 4.40 per household in comparison of small growers where it has been 3.60 per household. Thus, on the farms of marginal sugarcane growers the number of workers has been higher in comparison of small sugarcane growers on the farms of marginal growers the females & child workers have been reported but on the farms of small growers instead of females & child worker, hired workers have been reported in the area under study. The related data are given Table-V-6.

Land use pattern on the farms of factory sugarcane growers.

The categorywise land use pattern on the farms of sample factory sugarcane growers of the Khetan sugar factory, Ramkola. analysed in Table -V-7 indicates that the average cultivated area per farm has been estmated to 0.84 hectare of which 0.82 hectare has been irrigated and the remaining 0.02 hectare. has been unirrigated. The average owned area per farm has been found to be 0.83 hectare. Area leased in per farm has been 0.02 hectare Area leased out has been 0.01 hectare The area under orchards & growers 0.01 hectare and the area uncultivated has been 0.01 hectare.

Thus, maximum area of the owned hectare has been found to be operated in the area under study. The average cultivated area on the farms of marginal growers has been estimated to 0.57 hectare against 1.48 hectare. On the farms of small growers the proportion of irrigated area has been maximum on the farms of both the categories. Area under orchards growers and uncultivated land has been quite

Table No. V-6

Category-wise Distribution of Work Force in households of Samples Non-Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

No. of member of per households

S.No.	Category of Sugarcane Grower's	No. of Samples	Work-Force								Hired Worker's			Total Workers
			Farm-Worker				Non Farm Worker's				Casual	Permanent / Annual	Total	
			Male	Female	Children	Total	Male	Female	Children	Total				
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	20	1.86	1.10	0.15	3.10	1.15	0.45	0.10	1.70	-	-	-	4.80
2.	Small Sugarcane Growers (1 to 2 Hec)	10	1.50	0.30	-	1.80	-	-	-	-	0.80	1.00	1.80	3.60
3.	All Sugarcane Growers	30	1.73	0.83	0.10	2.66	0.76	0.30	0.06	1.13	0.27	0.33	0.60	4.40

Table No. V-7

Category-wise Land use Pattern on the Farms Samples Sugarcane Grower's of the Command area of Khetan Sugar Factory Ramkola, Distt. Kushinagar.

(Area in Hectare Per Farms ha.)

S.No.	Category of Sugarcane Growers	No. of Samples	Owned Area in Hectare			Area leased in Hectare			Area Leased out in Hectare			Orchard & Growers			Area in Uncultivated in Hectare			Cultivated Area/ operational Area in Hectare		
			Irrig.	Unlrrg	Total	Irrig.	Unlrrg	Total	Irng.	Unlrrg	Total	Irrig.	Unlrrg	Total	Irrig.	Unlrrg	Total	Irrig.	Unlrrg	Total
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	50	0.54	0.004	0.54	.023	-	0.023	-	-	-	-	0.004	0.004	-	0.004	0.004	0.57	0.004	0.57
2.	Small Sugarcane Grower's (1 to 2 Hectare)	20	1.50	0.03	1.53	-	-	-	0.033	-	0.003	-	0.03	0.03	-	0.03	0.03	1.47	0.011	1.48
3.	All Sugarcane Grower's	70	0.82	0.01	0.83	0.02	-	0.02	0.01	-	0.01	-	0.01	0.01	-	0.01	0.01	0.82	0.02	0.84

negligible. Thus, maximum area of the total owned area by the factory sugarcane growers have been found to be cultivated area. The related data are given in table V-7.

Land-use pattern on the farms of non-factory sugarcane growers :

The category wise land use pattern on the farms of sample non-factory sugarcane growers of the Khetan sugar factory Ramkola, analysed in table V-8. shows that the average cultivated area per farm has been estimated 0.91 hectare of which 0.89 hectare has been irrigated and 0.02 hectare unirrigated the total owned area per farm has been found to be 0.90 hectare of which 0.83 hectare has been irrigated. The area leased-in per farm has been represented to be 0.007 hectare Area leased out, has been found to be 0.02 hectare per farm, the area under orchard & groves 0.02 hectare and the area uncultivated has been estimated to 0.02 hectare per farm in the area under study. The average cultivated area per farm of marginal growers has been estimated to 0.59 hectare against 1.51 hectare on the farms of small sugarcane growers. Thus, the average cultivated area has been found to be increasing with the increase in the size of farms. The related data are given on table -V-8.

Cropping pattern followed and cropping intensity on the farms of factory sugarcane growers :

The categorywise cropping pattern followed and cropping intensity on the farms of factory sugarcane growers of Khetan sugar factory Ramkola, (Kushinagar) analysed in table -V-9 shows that the average gross cropped area on the farms of sugarcane growers has been estimated to be 1.82 hectares per farm of which 0.87 hectares has been

Table No. V-8

Category-wise Land use Pattern on the Farms Samples Non-Factory Sugarcane Grower's of the Command area of Khetan Sugar Factory Ramkola, Distt. Kuahinagar

(Area in Hectare Per Farms ha.)

S.No.	Category of Sugarcane Growers	No. of Samples	Owned Area in Hectare			Area leased in Hectare			Area Leased out in Hectare			Orchard & Growers			Area in Uncultivated in Hectare			Cultivated Area/ operational Area in Hectare		
			Irrig.	Unlrrg	Total	Irrig.	Unlrrg	Total	Irrig.	Unlrrg	Total	Irrig.	Unlrrg	Total	Irrig.	Unlrrg	Total	Irrig.	Unlrrg	Total
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	20	0.56	0.01	0.57	0.01	-	0.01	-	-	-	-	0.02	0.02	-	0.02	0.02	0.57	0.02	0.59
2.	Small Sugarcane Grower's (1 to 2 Hectare)	10	1.53	0.04	1.57	-	-	-	0.05	-	0.05	-	0.04	0.04	-	0.04	0.04	1.49	0.02	1.51
3.	All Sugarcane Grower's	30	0.88	0.02	0.90	0.007	-	0.007	0.02	-	0.02	-	0.02	0.02	-	0.02	0.02	0.89	0.02	0.91

cropped during Kharif., 0.83 hectare during Rabi and 0.16 hectare during Zaid season. During Kharif, season the maximum i.e. 0.53 hectare has been covered under sugarcane, 0.26 hectare under paddy and 0.04 hectare under other crop. During Rabi seasn also the area covered under sugarcane has continued, 0.25 hectare has been covered under wheat and 0.05 hectare by other Rabi crop. While during zaid season the area covered by vegetables has been 0.09 hectare and 0.07 hectare by other crops. Thus, the average cropping intensity on the farms of sugarcane growers has been estimated to 213.79%. While the average gross cropped area on the farms of marginal growers has been 1.27 hectare of which 0.57 hectare has been covered during Kharif & Rabi each and 0.13 hectare during Zaid and the average cropping intensity on the farms of marginal growers has been estimated to 222.1% on the farms of small growers the average gross cropped area per farm has been estimated 3.15 hectare of which 1.47 hectares have been covered during Zaid the average cropping intensity on the farms of small growers has been estimated to 214.96%.

Thus, the cropping intensity has been found to be higher on the farms of marginal growers. Which clarifies that marginal farmers cultivate their available land intensively. The related data given are table-V-9.

Cropping pattern followed and cropping intensity on the farms of non-factory sugarcane growers :

The category wise cropping pattern and cropping intensity on the farms of non-factory sugarcane growers of the Khetan sugar factory, Ramkola have been analysed in Table V-10 indicates that the average gross cropped area on the farms of sugarcane growers has been

Table -9

Cropping Pattern and cropping intensity on Farms of Selected Factory Sugarcane Grower's of Khetan Sugar Factory Ramkola Distt. Kushinagar.

(Area in Hectare Per Farm)

S.No.	Category of Sugarcane Grower's	No. of Samples	Kharif				Rabi				Zaid			Gross Cropped Area	Cropping intensity
			Paddy	Sugarcane	Other's	Total	Wheat	Sugarcane	Other's	Total	Vegetable	Other's	Total		
1.	Marginal Farmer's Below 1 Hectare	50	0.19	0.34	0.03	0.57	0.18	0.35	0.04	0.57	0.08	0.05	0.13	1.27	222.80
2.	Small Farmer's (1 to 2 Hectare)	20	0.43	0.98	0.04	1.47	0.40	0.98	0.09	1.47	0.11	0.11	0.21	3.15	214.96
3.	All Farmers (Overall Average)	70	0.26	0.53	0.04	0.83	0.25	0.53	0.05	0.83	0.09	0.07	0.16	1.82	213.79

estimated to 1.99 hectares Per farm of which 0.89 hectare has been covered during Kharif, 0.90 hectare during Rabi and 0.20 hectare during Zaid seasons.In Kharif seasons the maximum area has been covered under paddy and sugarcane, during Rabi-wheat & sugarcane & during Zaid season others crops & vegetable. On the farm of marginal growers the average gross cropped area has been estimated to be 1.31 hectares per farm against 3.31 hectares per farm on the farms of small growers. Same cropping pattern has been followed on the farms of both the categories on the farms. The average cropping intensity has been almost the same on the farms of both the categories. The related data are given table -V-10.

Fixed & variable costs of paddy cultivation on the farms of factory sugercane growers :

The categorywise fixed & variable costs of paddy on the farms of selected factory sugarcane growers of the Khetan sugar factory, Ramkola, analysed in V-11 indicates that the average total cost of paddy per farm has been estimated to Rs. 2172 of which the maximum i.e. Rs. 2154 have been incurred on account of variable cost and Rs. 18.07 on account of fixed cost. Among variable costs the maximum i.e. Rs. 1040 has been incurred on human labour, Rs. 388 on machinery charge, Rs. 382 on seeds, Rs. 258 on manures and fertilizers, Rs.62 on irrigation, and Rs. 25 on pesticides on an average in the area under study.

Which on the farms of marginal growers the total cost per farm has been on account of variable cost and only Rs. 12 on account of fixed

Table -V-10

Cropping Pattern and cropping intensity on Farms of Selected Non-Factory Sugarcane Grower's of Khetan Sugar Factory Ramkola, Distt. Kushinagar.

(Area in Hectare Per Farm)

S.No.	Category of Sugarcane Grower's	No. of Samples	Kharif				Rabi				Zaid			Gross Cropped Area	Cropping intensity
			Paddy	Sugarcane	Other's	Total	Wheat	Sugarcane	Other's	Total	Vegetable	Other's	Total		
1.	Marginal Farmer's Below 1 Hectare	20	0.26	0.30	0.04	0.60	0.27	0.30	0.03	0.40	0.05	0.08	0.13	1.31	221.66
2.	Small Farmer's (1 to 2 Hectare)	10	0.81	0.60	0.07	1.48	0.74	0.61	0.14	1.49	0.11	0.24	0.34	3.31	222.81
3.	All Farmers (Overall Average)	30	0.44	0.40	0.05	0.90	0.43	0.40	0.07	0.90	0.07	0.13	0.20	1.99	221.11

cost. Among the variable cost the maximum has been incurred on human labour against the minimum on pesticides. While on the farms of small growers the total cost has been estimated to Rs. 3463 per farm of which Rs. 3430 has been incurred on account of variable costs and only Rs. 33 as fixed cost.

Among the variable costs the maximum has been incurred on human labour against the minimum on other expenses. Thus, the paddy cultivation on the farms of small growers has been found to be comparatively much expensive than on the farms of marginal growers in the area under study. The related data are given in Teble-V-11.

Fixed & variable costs of paddy on the farms of non-factory sugarcane growers :

The categorywise fixed & variable costs of paddy on the farms of non-factory sugarcane growers analysed in table-V-12. shows that the average total cost of paddy per farm has been estimated to Rs. 2798 of which the maximum i.e. Rs. 2776 has been incurred on account of variable costs and Rs. 22 on account of fixed cost. The maximum amount of the variable cost i.e. Rs. 1292 has been incurred on human labour, Rs. 614 on machinery, Rs. 403 on seeds Rs. 319 manures and fertilizers, Rs. 92 on irrigation, Rs. 35 on pesticides, Rs. 27 bullock labour and only Rs. 25 on other expenses. The total cost per farm has been estimated to be much lower i.e. Rs. 1698 on the farms of marginal growers against Rs. 4960 per farm on the farms of small growers which obviously indicates that paddy cultivation has been comparatively much expensive on the farms of non-factory sugarcane growers comparison of

Table -V-11

Fixed & Variable Costs of Paddy on Farms of Selected Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola Distt. Kushinagar.

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	No. of Samples Sugarcane Growers	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
			Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	50	0.19	797.60	-	300.00	295.20	200.40	36.00	14.40	-	1643.60	12.00	1655.60
2.	Small Sugarcane Grower's (1 to 2 Hectare)	20	0.43	1647.00	-	602.50	600.75	402.50	101.00	50.00	26.00	3429.75	33.25	3463.00
3.	All Sugarcane Grower's	70	0.26	1040.28	-	386.43	382.50	258.14	62.00	24.57	7.42	2153.23	18.07	2172

Table -V-12

Fixed & Variable Costs of Paddy on Farms of Selected Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola Distt. Kushinagar.

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	No. of Samples Sugarcane Growers	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
			Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	20	0.26	725.00	40.00	351.75	232.50	235.00	65.00	20.00	12.50	1681.75	16.00	1697.75
2.	Small Sugarcane Grower's (1 to 2 Hectare)	10	0.813	2295.00	-	1139.50	744.00	487.50	145.50	65.00	48.50	4924.50	35.50	4960.00
3.	All Sugarcane Grower's	30	0.44	1291.66	26.66	614.33	403.00	319.16	91.66	35.00	24.50	2775.66	21.50	2798.16

the farms of factory sugarcane growers. The related data are given in V-12.

Fixed & variable costs of sugarcane on the farms of factory sugarcane growers :

The categorywise fixed and variable costs of sugarcane on the farms of selected factory sugarcane growers of the Khetan sugar factory Ramkola, analysed in table-V-13 shows that the average total cost per farm has been estimated to Rs. 21030 of which the maximum i.e. Rs. 21012 has been incurred on variable costs and only Rs. 18 on fixed cost. In case of variable costs the maximum i.e. Rs. 5773 have been incurred on human labour, Rs. 2727 on machinery charges, Rs. 3309 on seeds, Rs. 5137 on manures & fertilizers and Rs. 3765 on irrigation, Rs. 223 on pesticides and Rs.48 on bullock labour and Rs. 39 on other expenses.

Thus, the major items of variable costs have been human labour, manures and fertilizers, irrigation and seeds in the area under study. The average total cost of sugarcane on the farms of marginal growers have been estimated to Rs. 13826 per farm against Rs. 39037 per farm on the farm of small growers on the farms of both the categories the same pattern of cost incurred has been reported in the area under study.

The cultivation of sugarcane on the farms of small sugarcane growers has been found to be comparatively much expensive than that on the farms of marginal sugarcane growers in the area under study. The related data are given in Table V-13.

Table -V-13

Fixed & Variable Costs of Sugarcane (Kharif) on Farms of Selected Factory Sugarcane grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	No. of Samples Sugarcane Growers	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
			Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	50	0.34	3597.28	52.52	1786.32	2279.6	3427.36	2526.20	121.00	25.00	13815.28	11.80	13826.08
2.	Small Sugarcane Grower's (1 to 2 Hectare)	20	0.96	11213.50	-	5078.6	5883.00	9412.8	6863.5	477.50	75.00	39003.9	33.25	39037.15
3.	All Sugarcane Grower's	70	0.528	5773.34	37.51	2726.97	3309.14	5137.48	3765.42	222.85	39.285	21012.02	17.92	21029.95

Fixed & variable costs of sugarcane on the farms of non-factory sugarcane growers :

The categorywise fixed & variable costs of sugarcane on the farms of selected non-factory sugarcane growers of the Khetan sugar Factory Ramkola analysed in table -V-14 shows that the average total cost sugarcane per farm has been estimated to Rs. 10308 of which Rs. 10287 has been on the total variable cost and only Rs. 22 has been accounted as fixed cost. The cost of human labour has been the main variable cost followed by manures & fertilizers, seeds, irrigation and machinery charges. The total as well as variable costs have been found increasing with the increase in the size of farms on the farms of both the categories. Thus, the small farmers of the non-factory areas produced the sugarcane with higher expenses. The related data are given in table-V-14.

Fixed & variable costs of other (Kharif) crops on the farms of factory sugarcane growers.

The categorywise fixed & variable cost of other Kharif crop on the farms of selected factory growers analysed in table-V-15. shows that the average total cost per farm has been accounted to Rs. 438 per farm of which the variable costs has been estimated to Rs. 425 and only Rs. 13 as fixed cost. Human labour cost has emerged as the main cost against the cost of pesticides on which the minimum cost per hectare. has been estimated to Rs. 322, while on the small farms, it has been estimated to Rs. 728 per farm. Thus, cost per farm in case of other crops

Table -V-14

Fixed & Variable Costs of Sugarcane (Kharif) on Farms of Selected Non Factory Sugarcane grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	No. of Samples Sugarcane Growers	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
			Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	20	0.29	2600.00	-	868.84	1754.00	1365.50	1060.00	12.50	-	7660.4	15.00	7675.40
2.	Small Sugarcane Grower's (1 to 2 Hectare)	10	0.60	5191.25	-	1729.95	3642	2731.5	2124.50	70.00	50.00	15539.2	35.50	15574.70
3.	All Sugarcane Grower's	30	0.40	3463.75	-	1155.56	2383.33	1820.83	1414.16	31.66	16.66	10286.66	21.83	10308.49

Table -V-15

Fixed & Variable Costs of other crops (Kharif) on Farms of Selected Factory Sugarcane grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	No. of Samples Sugarcane Growers	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
			Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	50	0.031	103.12	41.00	30.00	20.68	49.20	47.00	-	18.76	309.76	11.80	321.56
2.	Small Sugarcane Grower's (1 to 2 Hectare)	20	0.059	225.00	-	123.00	54.75	100.00	133.00	39.25	37.00	712.00	16.00	728
3.	All Sugarcane Grower's	70	0.039	137.94	29.28	56.57	30.41	63.71	71.57	11.20	23.97	424.68	13.00	437.68

and the small farms have been more than double the cost incurred on the marginal farms. The related data are given in table-V-15.

Fixed & variable costs of other Kharif crops on the farms of non-factory sugarcane growers.

The categorywise fixed & variable costs of other Kharif crop on the farms of selected non-factory growers, analysed in table-V-16 shows that the total cost per farm has been estimated to Rs. 511 on an average of which the maximum i.e. Rs. 492 have been accounted as variable cost and only Rs. 19 as fixed cost. The cost on human labour charge has been the main variable cost and the remaining variable cost have been accounted to be nominal which shows that marginal farms have been found to be profitable for growing other crops than on the small farms. Thus, the variable as well as fixed cost have been nominal except human labour cost on the farms of both the categories. The related data are given in table V-16.

Fixed & variable costs of wheat on the farms of factory sugarcane growers.

The categorywise fixed & variable costs of wheat on the farms of selected factory sugarcane growers, of Khetan sugar factory, Ramkola. analysed in table V-17 indicates that the over all average total cost of wheat per farm has been estimated to Rs. 2085 of which Rs. 2067 has been accounted as variable cost and only Rs. 1897 fixed cost. The break-up of variable cost shows that the maximum i.e. 771 has been the human labour charge, Rs. 347 machinery charge, Rs. 242 seeds, Rs. 267 manures & fertilizers Rs. 364 irrigation charges, Rs. 21 pecticides &

Table -V-16

Fixed & Variable Costs of other's crop (Kharif) on Farms of Selected Non Factory Sugarcane grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	No. of Samples Sugarcane Growers	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
			Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	20	0.42	234.00	20.00	335.00	35.75	39.50	33.50	-	30.50	426.75	13.75	440.50
2.	Small Sugarcane Grower's (1 to 2 Hectare)	10	0.07 (0.065)	300.50	10.00	86.50	50.00	55.50	50.00	38.00	31.50	622.00	28.50	650.50
3.	All Sugarcane Grower's	30	0.05 (0.0496)	256.16	16.66	51.16	40.50	44.83	39.00	12.66	30.83	491.833	18.66	510.50

only Rs. 7 has been accounted on other expenses. The small farms have been found to be comparatively much expansive for growing wheat in the sugarcane factory area under study. The related data are given in table -V-17.

Fixed & variable costs of wheat on the farms of non-factory sugarcane growers.

The categorywise fixed & variable costs of wheat on the farms of selected non-factory sugarcane growers of Khetan Sugar factory Ramkola analysed in table V-18 shows that the average total cost of wheat per farm has been estimated to Rs. 3417 of which Rs. 3393 have been as variable cost and only Rs. .522 as fixed costs. The itemwise variable cost shows that the cost of human labour has been found to be maximum followed by cost of machinery, seeds, irrigation & manures & fertilizers. The cost of wheat on small farms have been accounted to be more than double of the cost of the marginal farms of the non-factory sugarcane area. Thus, the farms growing wheat have been found to be comparatively much expensive than the farms of sugarcane factory area. The related data are given in table V-18.

Fixed & variable costs of sugarcane (Rabi) on the farms of factory sugarcane growers.

The categorywise fixed & vàriable cost of sugarcane on the farms of selected factory sugarcane growers of Khetan sugar factory Ramkola. analysed in table-V-19 indicates that the overall average total cost of Rabi sugarcane has been estimated Rs. 17475 of which Rs. 17407 have been accounted as variable cost and only Rs. 15 as fixed cost. Thus,

Table -V-17

Fixed & Variable Costs of Wheat on Farms of Selected Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	No. of Samples Sugarcane Growers	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
			Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	50	0.18	520.80	37.00	185.30	193.50	207.60	271.20	17.00	9.30	1441.70	12.00	1453.70
2.	Small Sugarcane Grower's (1 to 2 Hectare)	20	0.40	1397.50	122.50	750.00	362.75	413.75	522.25	32.50	-	3631.25	32.00	3663.25
3.	All Sugarcane Grower's	70	0.25	771.285	61.42	346.64	241.85	266.50	363.64	21.42	6.64	2067.28	17.71	2085.00

Table -V-18

Fixed & Variable Costs of Wheat on Farms of Selected Non-Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	No. of Samples Sugarcane Growers	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
			Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	20	0.30	751.25	120.00	547.75	275.50	207.70	307.30	30.00	25.00	2259.50	15.50	2275.00
2.	Small Sugarcane Grower's (1 to 2 Hectare)	10	0.74	1980.00	210.00	1252.50	737.00	620.00	775.00	40.00	50.00	5664	35.50	5700.00
3.	All Sugarcane Grower's	30	0.44	1160.83	150.00	782.66	429.33	345.13	459.86	33.33	33.33	3393.5	22.16	3416.66

fixed cost is nominal while among the variable costs the maximum charges have been incured on human labour followed by irrigation charge, seeds, manures & fertilizers & machinery charge.

Thus, growing Rabi sugarcane has been comparatively costly than growing sugarcane in Kharif year. The farm category wise detailed analysis indicates that the growing Rabi sugarcane on large farms has been much expensive in the area under study. On the other hand the cultivation of sugarcane has been found to be profitable on the farms of marginal sugarcane growers. The related data are given in table-V-19.

Fixed & variable costs of Rabi sugarcane on the farms of non-factory sugarcane growers.

The category wise fixed & variable costs of sugarcane on the farms of selected non-factory sugarcane growers of Khetan sugar factory Ramkola analysed in table V-20, shows that the average total cost of Rabi sugarcane has been estimated to be Rs. 17168 of which Rs. 11146 have been found to be variable cost and only Rs. 23 as fixed cost. Among the variable costs the cost of Human labour has been estimated to Rs. 3800 per farm, seeds-2320 Rs. Manures & fertilizers Rs. 1977 irrigation Rs. 1617, machinery charge, Rs. 1220 other expenses Rs. 23 per farm. The farmwise analysis shows that the total cost per farm in case of marginal farms has been only Rs. 8089 against Rs. 16728 per farm on the small sugarcane farms. The related data are given V-20.

Table -V-19

Fixed & Variable Costs of Sugarcane (Rabi) on Farms of Selected Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	No. of Samples Sugarcane Growers	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
			Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	50	0.35	4040.80	77.50	1354.36	2094.44	1757.00	1940.70	97.48	-	11344.24	11.80	11356.04
2.	Small Sugarcane Grower's (1 to 2 Hectare)	20	0.98	11766.00	-	4508.35	5883.00	4902.5	5392.75	196.1	200.00	32748.70	23.25	32771.95
3.	All Sugarcane Grower's	70	0.53	6248.00	55.35	2255.50	3176.85	2655.71	2927.00	112.8	66.66	17459.80	15.07	17474.87

Table -V-20

Fixed & Variable Costs of Sugarcane (Rabi) on Farms of Selected Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	No. of Samples Sugarcane Growers	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
			Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	20	0.29	2700.50	72.50	919.50	1659.50	1447.50	1211.00	-	62.50	8073.00	16.00	8089
2.	Small Sugarcane Grower's (1 to 2 Hectare)	10	0.60	6000.00	-	1821.00	3642.00	3035.00	2428	70.00	-	16692.50	35.50	16728
3.	All Sugarcane Grower's	30	0.40	3800.33	48.33	1220.00	2320.33	1976.66	1616.66	23.33	41.66	11145.50	22.50	11168

Fixed & variable costs of other (Rabi) crops on the farms of factory sugarcane growers.

The category wise fixed & variable costs of other Rabi crops on the farms of selected factory sugarcane growers analysed in table-V-21 indicates that the total cost of other (Rabi) crops has been estimated to Rs. 445 per farm on an average of which Rs. 431 have been accounted as variable cost and Rs. 14 as fixed cost. Among the items of variable costs, human labour has been fond to be main item of cost followed by seeds, manures & fertilizer, machinery charge, irrigations and pesticides and the other expenses have been found to be quite nominal. In case of other Rabi crops also the marginal farms have been found to be much profitable than small farms because the total cost of other Rabi crops on the small farms has been found to be more than double of the same on marginal farms. The related data are given in table-V-21.

Fixed & variable costs of other Rabi crops on the farms of non-factory sugarcane growers.

The categorywise fixed & variable costs of other Rabi crops on the farms of selected non-factory sugarcane growers of Khetan sugar factory of Ramkola, analysed in table-V-22 shows that the total cost of other Rabi crops per farm has been estimated to be Rs. 532 on an average of which Rs. 523 have been found as variable cost and only Rs.9 as fixed cost. In the variable costs the main costs have been human labour followed by seeds, machinery charge, irrigation, manures & fertilizers, pesticides and the other expenses which have been very nominal. The farm-wise analysis shows that the marginal farms of the

Table -V-21

Fixed & Variable Costs of Other Crops (Rabi) on Farms of Selected Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	No. of Samples Sugarcane Growers	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
			Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	50	0.041	136.10	11.50	37.90	88.20	13.30	21.00	9.00	5.00	322.00	10.20	332.20
2.	Small Sugarcane Grower's (1 to 2 Hectare)	20	0.087	290.50	7.50	111.60	155.00	42.25	46.75	31.00	15.00	703.50	23.25	726.75
3.	All Sugarcane Grower's	70	0.054	181.36	10.35	58.92	107.29	21.57	28.36	15.28	7.85	431.00	13.92	444.92

Table -V-22

Fixed & Variable Costs of Other Crops (Rabi) on Farms of Selected Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Dist. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	No. of Samples Sugarcane Growers	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
			Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	20	0.028	87.00	7.50	29.50	57.75	15.50	13.75	-	-	211.00	5.50	216.50
2.	Small Sugarcane Grower's (1 to 2 Hectare)	10	0.143	447.00	-	148.00	259.50	75.00	147.00	60.00	11.5	1148.00	13.50	11.61.50
3.	All Sugarcane Grower's	30	0.066	207.00	5.00	69.00	125.00	35.33	58.16	20.00	3.83	523.33	8.16	531.50

non-factory areas have been found to be much profitable than the small farms for growing other Rabi crops. The related data are given in Table-V-22.

Fixed & variable costs of Zaid vegetables on the farms of factory sugarcane growers.

The categorywise fixed & variable costs of Zaid vegetable on the farms of selected factory sugarcane growers of Khetan Sugar Factory Ramkola, analysed in table-V-23 shows that the total cost of Zaid vegetables per farm has been estimated to Rs. 648 per farm on an average of which the maximum i.e. Rs. 635 have been found to be incurred on variable cost and only Rs. 13 as fixed costs. Among variable cost, Rs. 215 has been found to be incurred on human labour, Rs. 127 machinery charge Rs. 123 irrigation charge, Rs. 94 seeds, Rs. 43 manures & fertilizers, Rs. 26 Pesticides and only Rs. 8 as other expenses. The total cost per farm on the farm of both the categories have been found to be more or loss the same with slightly higher on the small farms. Thus, growing Zaid vegetables has been found to be costlier bear on all the farms of both the categories of factory area. The related data are given in table-V-23.

Fixed & variable cost of Zaid vegetables on the farms of non-factory sugarcane growers.

The category wise fixed & variable costs of Zaid vegetables on the farms of selected non-factory sugarcane growers of Khetan sugar factory analysed in table V-24 indicates that the total cost of Zaid

Table-V-23

Fixed & Variable Costs of Vegetable (Zaid) on Farms of Selected Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	No. of Samples Sugarcane Growers	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
			Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	50	0.082	208.30	-	120.6	81.1	33.2	121.60	18.5	-	583.30	10.00	593.30
2.	Small Sugarcane Grower's (1 to 2 Hectare)	20	0.108	235.50	-	143.75	127.50	66.75	124.75	44	28.75	765.70	19.5	785.20
3.	All Sugarcane Grower's	70	0.09	215.21	-	127.2	94.35	42.78	122.50	25.78	8.2	635.41	12.71	648.12

vegetables has been estimated to Rs. 567 per farm on an average of which Rs. 557 has been found to be variable costs & only Rs. 14 as fixed cost. Out of the total variable cost i.e. Rs. 557, Rs. 199 have been invested on human labour, Rs. 108 on irrigation, Rs. 96 on machinery charges, Rs. 83 on seeds and Rs. 56 on manures & fertilizers and only Rs. 15 have been invested on pesticides. The farmwise analysis shows that marginal farms have been found to be comparatively profitable than small farms of the non-factory area. Growing Zaid vegetables has been found to be cheaper than factory areas. The related data are given in table-V-24.

Fixed & variable costs of other Zaid crops on the farms of factory sugarcane growers.

Categorywise fixed & variable cost of other Zaid crops of the selected factory sugarcane growers of Khetan sugar factory Ramkola, analysed in table-V-25 indicates that the Average total cost of other Zaid crops has been estimated to Rs. 645 per farm of which Rs.631 have been estimated as variable cost & only Rs. 14 as fixed cost. Among the variable costs the maximum i.e. Rs. 358 have been incurred on human labour, Rs. 105 on irrigation, Rs. 69 on machinery charge, Rs. 60 on seed, Rs. 34 manures and fertilizer and only Rs. 21 other expenses. The farm wise analysis shows that the total cost of other Zaid crops on the marginal farms of the factory areas has been found to be much lower than the cost on the small farms of factory areas.

Thus, growing other Zaid crops on the small farms has been expensive than marginal farms in the factory area. The related data are given in table-V-25.

Table -V-24

Fixed & Variable Costs of Vegetable (Zaid) on Farms of Selected Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	No. of Samples Sugarcane Growers	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
			Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	20	0.051	166.51	-	69.25	70.00	63.63	103.77	14.00	-	477.75	12.25	490.00
2.	Small Sugarcane Grower's (1 to 2 Hectare)	10	0.107	265	-	150.00	110.00	55.00	117.50	17.50	-	715.00	17.00	732
3.	All Sugarcane Grower's	30	0.07	199.33	-	96.16	83.33	56.16	108.33	15.16	-	556.83	13.83	567.33

Table -V-25

Fixed & Variable Costs of Other Crop (Zaid) on Farms of Selected Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	No. of Samples Sugarcane Growers	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
			Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	50	0.52	276.40	3.00	51.10	47.80	14.20	87.60	-	4.40	484.50	12.4	496.90
2.	Small Sugarcane Grower's (1 to 2 Hectare)	20	0.105	561.00	-	112.50	92.00	83.00	147.50	-	-	995.75	-	995.72
3.	All Sugarcane Grower's	70	0.07	357.71	1.00	68.64	60.42	33.85	104.64	-	1.46	630.57	14.21	644.78

Fixed & variable costs of Zaid other crops on the farms of non-factory sugarcane growers.

The category wise fixed & variable cost of other Zaid crops on the farms of selected non-factory sugarcane growers analysed in Table-V-26 shows that the average total cost of other Zaid crops has been estimated to Rs. 895 per farm of which Rs.880 have been found to be variable cost and only Rs. 15 as fixed cost. Of the total variable cost Rs. 421 have been incurred on human labour, Rs. 157 on seeds, Rs. 150 on machinery charge, Rs. 104 on irrigation and only Rs. 43 on manures & fertilizer. The farmwise analysis shows that the total cost per farm has been estimated to Rs. 621 in case of marginal farms against Rs. 1421 in case of small farms. Thus, growing other Zaid crops in the non-factory area has been found to be much costlier particularly on the small farms. The related data are given in Table-V-26.

Fixed & variable costs of paddy per hectare on the farms of factory sugarcane growers

The categorywise fixed & variable costs of paddy per hectare. on the farms of factory sugarcane growers analysed in table-v-27, indicates that the total cost of paddy per hectare. has been accounted to Rs. 8286 of which the maximum i.e. Rs. 3968 have been invested on human labour, Rs. 1474 machinery charges Rs. 1459 seeds, 985 manures and fertilizers, Rs. 237 on irrigation, Rs. 94 on pesticides, and only Rs. 28 on other expenses. Thus, the total variable cost per hectare. has been accounted to Rs. 8217. While the fixed cost per hectare. on paddy has been accounted to Rs. 69 on average. The total cost of paddy per

Table -V-26

Fixed & Variable Costs of Other Crop (Zaid) on Farms of Selected Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Dist. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	No. of Samples Sugarcane Growers	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
			Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	20	0.076	282.50	7.5	106.70	113.75	29.75	81.00	-	-	620.95	10.5	620.95
2.	Small Sugarcane Grower's (1 to 2 Hectare)	10	0.235	697.50	-	237	242.50	70.00	150.00	-	-	1397	24	1421
3.	All Sugarcane Grower's	30	0.13	420.66	5.00	150.13	156.66	42.50	104.00	-	-	879.63	15	894.63

Table -V-27

Fixed & Variable Costs of Paddy on Farms of Selected Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
		Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	9.74 (0.19)	4094.45	-	1540.04	1515.40	1028.74	184.80	73.92	-	8437.37	61.60	8498.97
2.	Small Sugarcane Grower's (1 to 2 Hectare)	8.61 (0.43)	3825.78	-	1399.53	1395.47	934.95	234.61	116.14	60.39	7966.89	7723	8044.12
3.	All Sugarcane Grower's	18.35 (0.26)	3968.39	-	1474.11	1459.13	984.74	236.51	93.73	28.33	8216.62	68.93	8285.55

hectare. has been found to be higher on the marginal forms. While the fixed cost has been found to be higher on small farms. Thus, the paddy cultivation on the marginal farms has been expensive in comparison of the same on the small farms. The related data are given in table-V-27.

Fixed & variable costs of paddy per hectare on the farm's of non-factory sugarcane growers

The categorywise fixed & variable costs of paddy per hectare. on the farms of non-factory sugarcane growers analysed in table V-28, indicates that the average total cost of paddy on the forms of non-factory sugarcane grower has been accounted to Rs. 6321 on an average of which Rs. 6270 has been variable cost & Rs. 51 as fixed cost. The item wise break-up of variable cost shows that the maximum expenses i.e. Rs. 2820 have been incurred on human labour Rs. 1388 on machinery charge, Rs. 910 on seeds, Rs. 721 on manures of fertilizer, Rs. 207 on irrigation, Rs. 79 on pesticides, and only Rs. 55 on other expenses. On the farms of non-factory sugarcane growers also the total cost per hectare. has been found to be higher on the marginal farms in comparison of small farms. Accordingly the variable as well as fixed costs have also been found to be higher on the marginal farms. Thus, the paddy cultivation has been expensive an the marginal farms of this category also. The related data are given in Table -V-28.

Fixed & variable costs of Kharif sugarcane per hectare. on the farms of factory growers

Categorywise fixed & variable costs of Kharif sugarcane per hectare. on the farms of factory growers analysed in Table-V-29 shows

Table -V-28

Fixed & Variable Costs of Paddy on Farms of Selected Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
		Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	5.15 (0.26)	2815.53	155.34	1366.02	902.91	912.62	252.42	77.66	48.54	6531.06	62.13	6593.20
2.	Small Sugarcane Grower's (1 to 2 Hectare)	8.13 (0.813)	2822.87	-	1401.59	915.129	599.63	178.35	79.95	59.65	6057.195	43.66	6100.86
3.	All Sugarcane Grower's	13.28 (0.44)	2820.03	60.24	1387.80	910.39	721.009	207.07	79.06	55.34	6270.33	50.82	6321.15

Table -V-29

Fixed & Variable Costs of Sugarcane on Farms of Selected Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
		Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	17.33 (0.34)	10378.76	151.52	5153.83	6577.03	9888.51	7288.5	349.10	72.12	39859.43	34.04	39893.47
2.	Small Sugarcane Grower's (1 to 2 Hectare)	19.61 (0.96)	11436.51	-	5179.60	6000	9600	7000	486.996	76.49	39779.60	33.91	39813.51
3.	All Sugarcane Grower's	36.94 (0528)	109402.28	71.08	5167.51	6270.70	9735.35	7135.35	422.30	74.44	39817.05	33.97	39851.02

that the average total cost of sugarcane per hectare has been accounted to Rs. 39851 of which Rs. 39827 have been variable cost and only Rs. 34 has been accounted as fixed cost. In case of sugarcane also the maximum expenses have been incurred on human labour followed by manures & fertilizer, irrigation, seeds, machinery charges, pesticides, other expenses & the minimum on bullock labour charges per hectare. Total cost of sugarcane have been found slightly higher on the marginal farms in comparison of small farms. Thus, sugarcane cultivation has been found to be expensive on the marginal farms. The related data are given in Table-V-30.

Fixed & variable costs of other (Kharif) crops per hectare. on the farms of factory growers.

The categorywise fixed & variable costs of other's (Kharif) crop per hectare on the farms of factory growers analysed in Table -V-31 shows that the average total cost per hectare. has been accounted to Rs. 13092 on an average of which Rs. 12759 as variable cost on Rs. 333 as fixed cost. In case of other Kharif crops also the most expensive item of cost has been human labour, followed by irrigation. Manures & fertilizers, machinery charge, seeds, pesticides, bullak labour charge, and other expenses. In case of other Kharif crops the total cost per hectare. has been found to be higher on the small fams. Accordingly the fixed & variable costs have also been found to be higher on the small farms. Thus, in case of other Kharif crops the small farms have been comparatively more expensive than marginal farms. The related data are given in Table-V-31.

Table -V-30

Fixed & Variable Costs of Sugarcane (Kharif) on Farms of Selected Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
		Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	5.98 (0.29)	8695.65	-	2904.34	5866.22	4566.88	3545.15	41.80	-	25620.06	50.16	25670.23
2.	Small Sugarcane Grower's (1 to 2 Hectare)	6.07 (0.60)	8552.30	-	2850.00	6000	4500	3500	145.32	-	25600	58.48	25657.99
3.	All Sugarcane Grower's	12.05 (.40)	8623.44	-	2876.92	5933.60	4533.195	3522.40	78.83	-	25609.95	54.35	25664.30

Table -V-31

Fixed & Variable Costs of Other Crop's (Kharif) on Farms of Selected Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
		Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	1.55 (0.031)	3326.45	1322.58	967.74	667.09	1587.09	1516.12	-	605.16	9987.09	380.64	10372.90
2.	Small Sugarcane Grower's (1 to 2 Hectare)	1.18 (0.059)	3813.55	-	2084.74	927.96	1694.91	2254.23	665.25	627.11	12067.79	271.18	12338.98
3.	All Sugarcane Grower's	2.73 (0.039)	4144.206	879.82	1699.57	913.73	1914.163	2150.21	336.90	720.17	12758.79	333.33	13092.12

Fixed & variable costs of other (Kharif) crops per hectare. on the farms of non-factory growers.

The categorywise fixed & variable costs of other (Kharif) crops per hectare on the farmers of non-factory sugarcane growers analysed in Table-V-32. Shows that the total cost per hectare has been accounted Rs. 10279 of which Rs. 9903 have been incurred as variable cost, Rs. 376 as fixed cost incase of other Kharif crop also. Human labour has been highly expensive item of cost followed by machinery charge, manures & fertilizers, irrigation seeds, expenses on bullok charge & minimum on pesticides. The farm categorywise analysis shows that the total average cost in case of other Kharif crops has been found to be higher on the marginal farms and thus, the marginal farms of non-factory growing area have been found to be expensive in comparison of the same on small farms. The related data are given in table-V-32.

Fixed & variable costs of wheat per hectare on the farms of factory growers.

The category wise fixed & variable costs of wheat per hectare. on the farms of factory sugarcane growers analysed in Table-V-33 shows that the total average cost of wheat per hectare. has been accounted to Rs. 8481 of which 8408 have been estimated as variable cost and only Rs. 72 as fixed cost. In case of wheat also the maximum expenses i.e. Rs. 3138 have been invested on human labour, Rs. 1479 on irrigation, Rs. 1410 on machinery charge, Rs. 1084 on manures & fertilizers, Rs. 984 on seeds, Rs. 250 on bullock labour, Rs. 87 on pesticides and only Rs. 27 per hectare. on per other expenses. The average total cost per

Table -V-32

Fixed & Variable Costs of Other Crop's (Kharif) on Farms of Non Selected Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
		Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	0.84 (0.042)	5571	476.19	797.61	851.19	940.47	797.61	-	726.19	10160.71	327.38	10488.09
2.	Small Sugarcane Grower's (1 to 2 Hectare)	0.65 (0.065)	4623.00	153.84	1330.76	769.23	853.85	769.23	584.61	484.61	9569.23	428.46	10007.69
3.	All Sugarcane Grower's	1.49 (0.0496)	5157.71	335.57	1030.20	815.43	902.68	785.23	255.03	620.80	9902.68	375.83	10278.52

Table -V-33

Fixed & Variable Costs of Wheat on Farms of Non Selected Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
		Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	9.17 (0.18)	2839.69	201.74	1010.35	1055.07	1131.95	1478.73	92.69	50.70	7860.95	65.43	7926.39
2.	Small Sugarcane Grower's (1 to 2 Hectare)	8.04 (0.40)	3476.36	304.73	1865.67	902.36	1029.22	1373.75	80.80	-	9032.96	79.60	9112.56
3.	All Sugarcane Grower's	17.21 (0.25)	3137.129	249.85	1409.93	983.73	1083.96	1479.08	87.15	27.019	8408.48	72.05	8480.53

hectare has been found to be higher on small farms. Accordingly the fixed & variable cost have also been found to be higher on the small farms. Thus, in case of wheat the small farms have been found to be comparatively much expensive the marginal farms.

Fixed & variable costs of wheat per hectare on the farms of non-factory sugarcane growers.

The category wise fixed & variable costs of wheat per hectare. on the farms of non-factory sugarcane growers analysed in table-v-34 shows that the average total costs of wheat per hectare. in non-factory areas has been accounted to Rs. 7679 which has been found to be comparatively much lower, than that in factory area. The total variable cost per hectare. has been accounted to Rs. 7640 and fixed cost Rs. 50 per hectare. In this case also the most expensive item of cost has been the human labour followed by machinery charges, maures & fertilizers seeds, other expensive, and minimum on pesticides.

In non-factory areas also the small farms have been comparatively much expensive that marginal farms.

Fixed & variable costs of Rabi sugarcane per hectare on the farms of factory sugarcane growers.

The categorywise fixed & variable costs of Rabi sugarcane per hectare. on the farms of factory sugarcane growers. analysed in Table-V-35 shows that the average total cost per hectare. has been accounted to Rs. 33078 of which maximum i.e.- Rs. 33050 have been accounted as variable cost and only Rs. 29 as fixed cost. The expenses on human labour have been Rs. 11827 per hectare, seeds, -6014,

Table -V-34

Fixed & Variable Costs of Wheat on Farms of Non Selected Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
		Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	5.98 (0.30)	2512.54	401.337	1831.93	921.40	694.64	1011.03	100.334	83.61	7556.85	51.83	7608.69
2.	Small Sugarcane Grower's (1 to 2 Hectare)	7.35 (0735)	2693.87	285.71	1704.08	1002.72	843.53	1054.42	54.42	68.02	7706.80	48.29	7755.09
3.	All Sugarcane Grower's	13.33 (0.44)	2612.528	337.58	1761.44	966.24	776.74	1034.95	75.018	75.018	7639.53	49.88	7689.42

irrigation 5541, manures & fertilizers -Rs. 5027, machinery charge Rs. 4324, pesticides Rs. 214, bullock labour Rs. 105 & other expenses only Rs. 54. The total fixed cost as well as variable costs have been found to be higher on the small farms. While the fixed cost per hectare has been found to be higher on the marginal farms. Thus, in case of Rabi sugarcane the small farms have been much expensive than marginal farms. The related data are given in Table-V-35.

Fixed & variable costs of sugarcane per hectare on the farms of non-factory sugarcane growers.

The categorywise fixed & variable costs of sugarcane per hectare. on the farms of selected non-factory growers. analysed in Table-V-36 shows that the average total cost per hectare. has been accounted to Rs.27560 of which the maximum i.e. Rs. 27504 have been incurred as variable cost & only Rs. 56 as fixed cost. Among variable costs the maximum i.e. Rs. 9461 have been incurred on human labour, Rs. 5777 on seeds, Rs. 4921 manures & fertilizers Rs. 4025 irrigation, Rs. 30367 machinery charges Rs. 120 bullock charge, Rs. 104 other expenses and only Rs. 58 on pesticides. The farm categorywise analysis shows that the total cost per hectare. has been found to be higher on small farms. Accordingly total fixed & variable cost have also been found to be higher on the small farms. Thus, in case of Rabi sugarcane in non-factory areas also the small farms have been found to be comparatively much expensive than marginal farms. The related data are given in Table-V-36.

Table -V-35

Fixed & Variable Costs of Sugarcane (Rabi) on Farms of Selected Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
		Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	17.37 (0.35)	11631.54	223.08	3898.56	6028.78	5057.57	5599.24	228.78	-	32654.665	34.04	32688.625
2.	Small Sugarcane Grower's (1 to 2 Hectare)	19.61 (0.98)	12000	-	4598.01	6000.00	5000	5500	200	101.98	33400	23.71	33423.71
3.	All Sugarcane Grower's	36.98 (0.53)	11826.93	104.78	4323.55	6013.52	5027.04	5540.56	213.52	54.08	33049.91	28.52	33078.44

Table -V-36

Fixed & Variable Costs of Sugarcane (Rabi) on Farms of Selected Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
		Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	5.98	9031.77	242.47	3075.25	5550.16	4841.13	4050.16	-	209.030	27000.00	53.51	27053.51
2.	Small Sugarcane Grower's (1 to 2 Hectare)	6.07 (0.60)	9884.67	-	3000	5500	5000	4000	115.32	-	27500	58.48	27558.48
3.	All Sugarcane Grower's	12.05 (0.40)	9461.41	120.33	3037.34	5776.76	4921.16	4024.89	58.09	103.73	27503.7	56.01	27559.71

Fixed & variable costs of other (Rabi) crops per hectare on the farms of factory sugarcane growers.

The category wise fixed & variable costs of other (Rabi) crops per hectare. on the farms of selected factory growers analysed in Table -V-37 shows that the average total cost per hectare. has been accounted to Rs. 8196 of which the maximum i.e. Rs. 7939 has been accounted as variable cost and Rs. 257 as fixed cost. Of the total variable cost Rs. 3341 have incurred in human labour, Rs. 1976 on seeds, Rs. 1086 on machinery charge, Rs. 522 on irrigation, Rs. 397 on manures & fertilizers Rs. 282 on pesticides, Rs. 191 on bullock charges and only Rs. 145 on other expenses. Thus, important items of cost have been human labour, machinery charge & seeds, incase of other Rabi crops. Also the small farms have been found to be comparatively expensive than marginal farms as the total cost on small farms has been accounted to be comparatively higher than on the marginal farms. The related data are given in Table-V-37.

Fixed & variable costs of other (Rabi) crops per hectare on the farms of non-factory growers.

The categorywise fixed & variable costs of others crop (Rabi) per hectare. on the farms of selected non-factory growers analysed in table-V-38 shows that the total cost per hectare. has been accounted to Rs. 7973 of which Rs. 7850 have been accounted as variable cost, on Rs. 123 as fixed cost. In this case also the most expensive items of cost have been human labour, seed, machinery charges followed by irrigation. The other item of cost have been secondary. The farm wise analysis shows

Table -V-37

Fixed & Variable Costs of other crops (Rabi) on Farms of Selected Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
		Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	2.05 (0.041)	3319.51	280.48	924.39	2151.20	324.39	512.195	219.51	121.95	7853.65	248.78	8102.43
2.	Small Sugarcane Grower's (1 to 2 Hectare)	1.75 (0.087)	3320.00	85.71	1274.28	1771.42	482.85	534.28	354.285	171.428	8040.00	265.71	8305.71
3.	All Sugarcane Grower's	3.80 (0.054)	3340.78	190.78	1085.52	1976.315	397.36	522.368	281.57	144.736	7939.47	256.57	8196.05

that incase of other Rabi crops on the farms of non-factory growers. The small farms have been found to be comparatively expensive as the cost per hectare. has been higher on the small farms. The related data are given in Table-V-38.

Fixed & variable costs of Zaid vegetable crops per hectare on the farms of factory growers.

The categorywise fixed & variable costs of vegetable per hectare. on the farms of selected factory sugarcane growers analysed in Table-V-39 shows that the average total cost per hectare. has been accounted to Rs. 7271 of which s. 7128 have been accounted as variable cost & Rs. 143 as fixed cost. In case of Zaid vegetables the most expensive items of cost have been human labour, machinery charges, irrigation & seeds, the other items of cost have been found to be secondary. The farm wise analysis shows that the expenses on the farms of both the categories have been more or less the same except fixed cost which has been slightly higher on the small farms. Thus, both the small as well as marginal farms have been equally expensive in the factory areas. The related data are given in Table-V-39

Fixed & variable costs of Zaid vegetable per hectare. on the farms of non-factory growers.

The category wise fixed & variable costs of vegetable (Zaid) per hectare. on the farms of selected non-factory sugarcane growers. analysed in Table-V-40 shows that the total average cost per hectare. has been accounted to Rs. 8152 which has been found to be much higher than the on the farms, of factory growing areas of the total cost. The

Table -V-38

Fixed & Variable Costs of other crops (Rabi) on Farms of Selected Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Dist. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
		Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	0.57 (0.028)	3052.63	263.15	1035.08	2026.31	543.85	482.45	-	-	7403.50	192.98	7596.49
2.	Small Sugarcane Grower's (1 to 2 Hectare)	1.43 (0.143)	3125.87	-	1034.96	1814.68	524.47	1027.97	419.58	80.41	8027.97	94.40	8122.37
3.	All Sugarcane Grower's	2.00 (0.66)	3105.00	75.00	1035.00	1875.00	530.00	872.5	300.00	75.00	7850.00	122.50	7972.50

Table -V-39

Fixed & Variable Costs of (Zaid) Vegetable on Farms of Selected Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
		Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	4.09 (0.082)	2546.45	-	1474.33	991.44	405.86	1486.55	226.16	-	7130.80	122.24	7253.05
2.	Small Sugarcane Grower's (1 to 2 Hectare)	2.15 (0.108)	2162.79	-	1337.20	1186.04	620.93	1160.00	409.30	267.44	7122.79	181.39	7304.18
3.	All Sugarcane Grower's	6.24 (0.09)	2414.26	-	1427.08	1058.49	479.96	1374.19	289.26	92.14	7128.04	142.62	7270.67

maximum i.e. Rs. 7958 have been accounted as variable cost and Rs. 198 as fixed cost on this category of farms also the most expensive items of cost have been human labour, irrigation, machinery charges, seeds, manures & fertilizers the farm wise analysis shows that the marginal farms have been found to be comparatively much expensive than the small farms as the total cost per hectare. has been found to be much higher on the marginal farms. The related data are given in Table-V-40.

Fixed & variable costs of other Zaid crops per hectare on the farm of factory sugarcane growers.

Category wise fixed & variable cost of other (Zaid) crop per hectare. on the farm of selected factory sugarcane growers analysed in Table-V-41 shows that the total cost per hectare. has been accounted to Rs. 9563 on an average of which the maximum i.e. Rs. 9362 have been incurred as variable cost and Rs. 210 as fixed cost. In case of other Zaid crop the expensive items of variable cost have been human labour, irrigation machinery charges & seeds. The other costs have been quite nominal. The farm wise analysis shows that the small farms have been found to be expensive in comparison of marginal farms because the cost per hectare. has been found higher on the small farms. The related data are given in Table-V-41.

Fixed & variable costs of other Zaid of crops per hectare on the farm of non-factory sugarcane growers.

Categorywise fixed & variable costs of other (Zaid) crop per hectare. on the farm of selected non-factory sugarcane growers, analysed in Table-V-42 shows that the total cost per hectare. has been

Table -V-40

Fixed & Variable Costs of (Zaid) Vegetable on Farms of Selected Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Dist. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
		Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	1.03 (0.051)	3233.00	-	1344.00	1359.22	1101.94	2014.56	271.84	-	9276.69	237.86	9514.56
2.	Small Sugarcane Grower's (1 to 2 Hectare)	1.07 (0.107)	2476.63	-	1401.86	1028.03	514.01	1098.13	163.55	-	6682.24	158.87	6841.11
3.	All Sugarcane Grower's	2.10 (0.07)	2847.61	-	1373.80	1041.66	802.38	1547.61	216.66	-	7957.60	197.6	8152.38

Table -V-41

Fixed & Variable Costs of Other Crops (Zaid) on Farms of Selected Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category of Sugarcane Grower's	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
		Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	2.62 (0.52)	5274	57.25	975.19	912.21	270.99	1671.00	-	83.96	9246.18	236	9482.82
2.	Small Sugarcane Grower's (1 to 2 Hectare)	2.10 (0.105)	5342	-	1071.42	876.19	790.47	1402.38	-	-	9483.33	178.57	9661.90
3.	All Sugarcane Grower's	4.72 (0.07)	5305	31.77	1018.00	896.18	502.11	1551.90	-	46.61	9361.56	210	9562.5

accounted to Rs.6935 on an average which has been found to be much lower, than the costs in the farms of factory areas. Among the variable costs, human labour, seeds, machinery charges & irrigation have been found to be expensive items of costs. The farm wise analysis shows that the marginal farms have been found to be comparatively much expensive than the small farms. Thus, growing Zaid crops in the non-factory area has been a costly affair. The related data are given in Table-42.

Total costs of production of paddy per hectare on the farms of factory & non-factory sugarcane growers.

The category wise total costs production of paddy per hectare in terms of value on the sample farms of factory sugarcane growers, sugar factory Ramkola, analysed in table-V-43. Shows that the average total costs per hectare has been estimated to Rs. 8286 of which Rs. 8217 have been incurred on variable cost and only Rs. 69 has fixed cost. The average total production in terms of value has been estimated to Rs. 25037 per hectare on an average of which Rs. 23047 have been accounted from the main product only Rs. 1990 from the by product. Thus, the input-output ratio in case of paddy has been estimated to 1:3-02. The farm-wise analysis indicates that the average total costs as well as total production have been found to be higher on the farms of marginal growers. In comparison of the farms of small growers. Accordingly the input-output ratio has also been found to be higher on the farms of marginal growers in comparison of small growers. The related data are given in Table-V-43.

Table -V-42

Fixed & Variable Costs of Other Crops (Zaid) on Farms of Selected Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Category Sugarcane Grower's	VALUE OF IN-PUT IN RS.										Fixed Costs	Total Costs.
		Area (in Hectare)	Human Labour	Bullock Labour	Machinery Charge	Seeds	Manures Fertilizer's	Irrigation	Pesticides	Other Expences	Total Variable Cost		
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	1.52 (0.076)	3713.81	98.68	1403.94	1496.71	391.44	1065.78	-	-	8170.39	138.15	8308.55
2.	Small Sugarcane Grower's (1 to 2 Hectare)	2.35 (0.235)	2968	-	1559.20	1595.39	460.52	638.29	-	-	5944.68	102.12	6046.8
3.	All Sugarcane Grower's	3.87 (0.13)	3260.00	38.75	1163.82	1214.47	329.45	806.20	-	-	6818.86	116.27	6935.14

Table -V-43

Category-wise Total Costs & Production of Paddy on Sample Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Categories of Sugarcane Grower's	Total Costs (in Rs. Per Hectare)			Production (in Rs. per Hectare)			In-put & Out-put Ratio
		Variable Costs	Fixed Costs	Total Costs	Main Product	By Product	Total Product	
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	8437.37	61.60	8498.97	25719.71	2620.63	28340.34	1 : 3.33
2.	Small Sugarcane Grower's (1 to 2 Hectare)	7966.89	77.23	8044.12	20023.23	1626.01	21649.25	1 : 2.69
3.	All Sugarcane Grower's	8216.62	68.93	8285.55	23046.86	1990.46	25037.32	1 : 3.02

The categorywise total costs of production of paddy per hectare in terms of value on the sample farms of non-factory sugarcane growers of sugar factory Ramkola analysed in Table-V-44 shows that the average total cost per hectare of paddy has been estimated to Rs. 6321 of which Rs. 6270 have been incurred on variable costs 7 and only Rs. 51 on fixed cost. while the average production in value terms has been estimated to Rs. 17113 on an average of which Rs. 1659 have been accounts from main product & Rs. 1054 farm by product. Thus, the average input-output ratio on the farms of non-factory grower in case of paddy has been estimated to 1 : 2.70 on an average. Among the farms of non-factory sugarcane growers also the total cost as well as total production, have been estimated to be higher on the farms of marginal growers. But the input-output ratio has been estimated to be slightly higher on the farms of small sugarcane growers. Thus marginal farms of non-factory areas have also been found profitable for paddy cultivation. The related data are given in Table-V-44.

Total costs & production of the Kharif sugarcane per hectare on the farms of factory and non- factory sugarcane growers.

The categorywise total costs & production of Sugarcane (Kharif) on the sample farms of factory sugarcane growers of Ramkola analysed in the Table-V-45 shows that the average total cost per hectare has been estimated to Rs. 3985 of which Rs. 39817 have been incurred on variable cost and only Rs. 34 on fixed cost. The average total production per hectare interms of value has been estimated to Rs. 79815 per hectare of which Rs. 78815 have been accounted from main product and Rs. 1000 from by-product. Thus, the in-put-output ratio has been

Table -V-44

Category-wise Total Costs & Production of Paddy on Sample Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Categories of Sugarcane Grower's	Total Costs (in Rs. Per Hectare			Production (in Rs. per Hectare)			In-put & Out-put Ratio
		Variable Costs	Fixed Costs	Total Costs	Main Product	By Product	Total Product	
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	6531.06	62.13	6593.20	16640.77	1203.88	17844.65	1 : 2.70
2.	Small Sugarcane Grower's (1 to 2 Hectare)	6057	43.66	6100.67	15690.75	959.40	16650.16	1 : 2.72
3.	All Sugarcane Grower's	6270.33	50.82	6321.15	16059.17	1054.22	17113.38	1: 2.70

estimated to 1:2.00 on an average. The farmwise analysis shows that the total cost as well as total production have been found to be higher on he farms of marginal growers in comparison of the farms of the small growers. Accordingly the input, output ration has also been found to be slightly higher on the farms of marginal growers. The related data are given in Table-V-45.

The categorywise total cost of production per hectare Kharif (sugarcane) on the sample farms of non-factory sugarcane growers of Ramkola analysed in Table-V-46 indicates that the average total cost per hectare. has been estimated to Rs. 25729 of which Rs. 25675 have been incurred on variable cost and only Rs. 54 on fixed cost. The total production per hectare. in terms of value has been estimated to Rs. 32750 on an average of which Rs. 32150 have been accounted from main product and Rs. 600 farm by product.

Thus, the average input-output ratio has been estimated to be 1 : 1.27 on an overall average. The farmwise analysis shows that the total cost as well as total production per hectare. have been accounted to be higher on the farms of marginal growers in comparison of the farms of small growers. The input-output ratio has also been found to be slightly higher on the farm of marginal growers. Thus, farms of marginal growers have been found to be profitable and more productive than the farms of small growers.

Total costs & production of the other (Kharif) crops on the farms of factory & non-factory sugarcane growers.

The category wise total costs of production of other (Kharif) crops on the sample farms of the factory sugarcane growers of Ramkola

Table -V-45

Category-wise Total Costs & Production of Sugarcane (Kharif) on Sample of Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Categories of Sugarcane Grower's	Total Costs (in Rs. Per Hectare)			Production (in Rs. per Hectare)			In-put & Out-put Ratio
		Variable Costs	Fixed Costs	Total Costs	Main Product	By Product	Total Product	
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	39859.43	34.04	39893.47	79055.74	1050.00	80105.74	1 : 2.00
2.	Small Sugarcane Grower's (1 to 2 Hectare)	39779.60	33.91	39779.60	78575.04	925.00	79500.04	1 : 1.99
3.	All Sugarcane Grower's	39817.05	33.97	39851.03	78815.39	1000.00	79815.39	1 : 2.00

Table -V-46

Category-wise Total Costs & Production of Sugarcane (Kharif) on Sample of Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Dist. Kushinagar

(In Rs. Per Farms)

S.No.	Categories of Sugarcane Grower's	Total Costs (in Rs. Per Hectare			Production (in Rs. per Hectare)			In-put & Out-put Ratio
		Variable Costs	Fixed Costs	Total Costs	Main Product	By Product	Total Product	
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	25750.16	50.16	25800.32	32300.00	700	33000	1 : 1.279
2.	Small Sugarcane Grower's (1 to 2 Hectare)	25600	58.48	25658.48	32000.00	500	32500	1 : 1.26
3.	All Sugarcane Grower's	25674.52	54.35	25728.87	32150	600	32750.00	1 : 1.272

analysed in Table - V-47 shows that the average total cost per hectare has been estimated to Rs. 13149 of which Rs. 12759 have been invested on variable cost, and Rs, 391 on fixed cost. The average total production in terms of value per hectare. has been estimated to Rs. 22027 on an average of which Rs. 18360 has been accounted main product and Rs. 3637 from by product. The cost & production on the small farms have been found to be higher in comparison of marginal farms but the input, output ratio has been found to be higher on the marginal farms. Thus, marginal farms has been comparatively more productive than small farms the related data are given in table -V-47.

The categorywise total cost & production of other (Kharif) crop on small farms of the non-factory growers in Ramkola block analysed in Table-V-48 show that the average total cost per hectare. has been estimated to Rs. 10279 on an average of which Rs. 9902 have been invested on variable cost and Rs. 376 on fixed cost. The average total production per hectare. in terms of value has been estimated to Rs. 18434 of which Rs. 15520 have been accounted, as the value of main product and Rs. 3013 as by the value of by product. The farm wise analysis shows that the average cost as well as production of other Kharif crop have been slightly higher on the marginal farms. While the input-output ratio has been found to be more or less the same on the farms of both the categories. Thus, in the non-factory area of cultivation of other Kharif crops has been found to be similar as in the factory areas. The related data are given in Table-V-48.

Table -V-47

Category-wise Total Costs & Production of Other Crops (Kharif) on Sample of Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Dist. Kushinagar

(In Rs. Per Farms)

S.No.	Categories of Sugarcane Grower's	Total Costs (in Rs. Per Hectare)			Production (in Rs. per Hectare)			In-put & Out-put Ratio
		Variable Costs	Fixed Costs	Total Costs	Main Product	By Product	Total Product	
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	9992.26	380.64	10372.90	18822.85	3467.77	22290.62	1 : 2.15
2.	Small Sugarcane Grower's (1 to 2 Hectare)	12067.80	271.18	12338.98	20384.75	4000.00	24384.74	1:1.97
3.	All Sugarcane Grower's	12758.79	390.55	13149.36	18360.09	3667.38	22027.47	1 : 1.67

Table -V-48

Category-wise Total Costs & Production of Other Crops (Kharif) on Sample of Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Categories of Sugarcane Grower's	Total Costs (in Rs. Per Hectare)			Production (in Rs. per Hectare)			In-put & Out-put Ratio
		Variable Costs	Fixed Costs	Total Costs	Main Product	By Product	Total Product	
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	10160.71	327.38	10488.09	15596.047	3273	18869.047	1:1.79
2.	Small Sugarcane Grower's (1 to 2 Hectare)	9572.30	438.46	10010.76	15423.076	2676.92	18099.99	1:1.80
3.	All Sugarcane Grower's	9902.68	375.83	10278.51	15520.13	3013.42	18533.55	1 : 1.80

Total cost production of wheat on the farms of factory & non-factory sugarcane growers.

The categorywise total costs & production of wheat on the sample farm of the factory sugarcane growers of Ramkola analysed in Table-V-49 shows that the average total cost per hectare. of wheat has been estimated to Rs. 8481 of which Rs. 8408 have been invested in variable cost and only Rs. 72 as fixed cost. The average total production in terms of value has been estimated to Rs. 19804 per hectare of which Rs. 17965 have been received from main product and Rs. 1839 from by-product the farm wise analysis shows that the total costs have been found to be much higher on the small farms but the average total production has been found to be higher on marginal farms. Thus, the input-output ratio has been found to be higher on marginal farms and accordingly the marginal farms have been found to be more productive than small farms. The related data are given in Table-V-49.

The category wise total costs & production of wheat on the farms of non-factory sugarcane growers in Ramkola block.

Analysed in Table-V-50 shows that the average total cost per hectare. has been estimated to Rs. 8025 of which Rs. 7975 have been invested on variable cost and only Rs. 57 fixed cost. The average total production per hectare. In value terms has been estimated to Rs. 15086 of which the i.e. 13739 have been received from main product and Rs. 1347 from by product. The farm wise analysis shows that, in case of wheat also the variable cost higher on small farm but the average production per hectare. of wheat in terms of value has been found to be slightly higher on marginal farms. The input-output ratio has also been

Table -V-49

Category-wise Total Costs & Production of Wheat on Sample of Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Categories of Sugarcane Grower's	Total Costs (in Rs. Per Hectare)			Production (in Rs. per Hectare)			In-put & Out-put Ratio
		Variable Costs	Fixed Costs	Total Costs	Main Product	By Product	Total Product	
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	7860.95	65.43	9726.39	18270.99	1791.16	20062.15	1:2.53
2.	Small Sugarcane Grower's (1 to 2 Hectare)	9032.96	79.60	9112.56	17615.79	1893.65	19509.44	1 : 2.14
3.	All Sugarcane Grower's	8408.48	72.05	8480.53	17964.90	1839.04	19803.90	1: 2.33

Table -V-50

Category-wise Total Costs & Production of Wheat on Sample of Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Categories of Sugarcane Grower's	Total Costs (in Rs. Per Hectare)			Production (in Rs. per Hectare)			In-put & Out-put Ratio
		Variable Costs	Fixed Costs	Total Costs	Main Product	By Product	Total Product	
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	7556.85	51.83	7608.69	13260.86	1956.52	15216.52	1 : 2.01
2.	Small Sugarcane Grower's (1 to 2 Hectare)	7706.80	48.29	7755.09	13081.63	748.29	14578.21	1 : 1.89
3.	All Sugarcane Grower's	7974.54	51.29	8025.83	13739.23	1346.90	15086.139	1 : 1.879

found to slightly higher on marginal farms. Thus, marginal farms have been comparatively more productive than small farms. The related data are given in Table-V-50.

Total costs of production of sugarcane (Rabi) the farms of factory and non-factory sugarcane growers.

The category wise total costs & production of sugarcane (Rabi) on the sample farms of the factory sugarcane growers analysed in table-V-51 shows that the average total cost per hectare has been estimated to Rs. 33078 of which the maximum i.e. Rs. 33050 have been invested on variable cost & only Rs. 29 on fixed cost. The average total production per hectare. in terms of value has been estimated to Rs. 70613 of which Rs. 68938 have been received from main product and Rs. 1675 from by-product the farm wise analysis shows that the total cost per hectare. have been found to be higher on the small farm. Which the value of total production per hectare. has been found to be higher on the marginal farms. The input-output ratio has also been found higher on marginal farms in comparison of small farms. While the average input-output ratio has been estimated to 1 : 2.13. Thus, the marginal farms has been more productive than small farms in factories area as the related data are given in the Table-V-51.

The categorywise total costs & production of sugarcane (Rabi) on the sample farms of the non-factory sugarcane growers in Ramkola block distt. Kushinagar analysed in Table-V-52 shows that the average total costs per hectare have been estimated to Rs. 27308 of which Rs. 27252 have been invested on the variable cost and only Rs. 56 on fixed cost. The average total production in value terms has been estimated to Rs. 37488 per hectare of which Rs. 36475 have been received from main

Table -V-51

Category-wise Total Costs & Production of Sugarcane (Rabi) of Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Categories of Sugarcane Grower's	Total Costs (in Rs. Per Hectare)			Production (in Rs. per Hectare)			In-put & Out-put Ratio
		Variable Costs	Fixed Costs	Total Costs	Main Product	By Product	Total Product	
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	32654.69	33.96	32688.65	70000.00	1650.00	71650.00	1 : 2.19
2.	Small Sugarcane Grower's (1 to 2 Hectare)	33400	23.71	33423.71	67875.00	1700.00	69575.00	1 : 2.08
3.	All Sugarcane Grower's	33049.91	28.52	33078.44	68937.50	1675.00	70612.50	1 : 2.13

Table -V-52

Category-wise Total Costs & Production of Sugarcane (Rabi) of Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Categories of Sugarcane Grower's	Total Costs (in Rs. Per Hectare)			Production (in Rs. per Hectare)			In-put & Out-put Ratio
		Variable Costs	Fixed Costs	Total Costs	Main Product	By Product	Total Product	
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	27000	53.51	27053.51	36950.00	1125	38075	1 : 1.407
2.	Small Sugarcane Grower's (1 to 2 Hectare)	27500	58.48	27558.48	36000	900.00	36900	1 : 1.338
3.	All Sugarcane Grower's	27251.86	56.01	27307.87	36475	1012.50	37487.5	1 : 1.37

product and Rs. 1013 from by product. Among the farms the total cost as well as production have been found to be higher on the marginal farms. Accordingly the input-output ratio has also been higher on the marginal farms. Thus, marginal farms have been productive than small farms. The related data are given in Table -V-52.

Total costs & production of other (Rabi) crops on the farms of factory & non-factory sugarcane growers.

The categorywise total costs & production of other (Rabi) crop on the sample farms of the factory sugarcane growers analysed in Table - V-53 shows that the average total cost per hectare in case of other Rabi crops have been estimated to Rs.8196 on an average of which Rs. 7939 have been accounted as variable cost and Rs.257 as fixed cost. The average total production per hectare has been estimated to Rs. 13128 of which Rs. 12213 have been received from main product and Rs. 814 from by product. The farmwise analysis shows that the average cost as well as production per hectare. from other Rabi crop have been higher on the small farms in comparison of marginal farm. The input-output ratio has also been higher on the small farm. Thus, in case of other Rabi crop in factory areas the small farms have been found to be more productive than marginal farms. The related data are given in Table-v-53.

The categorywise total costs & production of other (Rabi) crops on the sample farms of the factory sugarcane growers of the Khetan sugar factory Ramkola Distt. - Kushinagar.

The data are analysed in Table-V-54 shows that the average total other Rabi costs per hectare. have been estimated to Rs. 7973 of which Rs. 7850 have been incurred on variable cost and Rs. 123 on fixed cost. The average total production in terms of value has been estimated to Rs. 13693 per hectare of which Rs. 12100 have been accounted from

Table -V-53

Category-wise Total Costs & Production of Other Crops (Rabi) on sample of Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Categories of Sugarcane Grower's	Total Costs (in Rs. Per Hectare)			Production (in Rs. per Hectare)			In-put & Out-put Ratio
		Variable Costs	Fixed Costs	Total Costs	Main Product	By Product	Total Product	
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	7853.65	248.78	8102.44	12468.29	390.24	12858.53	1 : 1.58
2.	Small Sugarcane Grower's (1 to 2 Hectare)	8040	265.71	8305.71	11914.28	1528.57	13442.85	1 : 1.61
3.	All Sugarcane Grower's	7939.47	256.57	8196.05	12213.15	914.47	13127.62	1 : 1.60

Table -V-54

Category-wise Total Costs & Production of Other Crops (Rabi) on sample of Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Categories of Sugarcane Grower's	Total Costs (in Rs. Per Hectare)			Production (in Rs. per Hectare)			In-put & Out-put Ratio
		Variable Costs	Fixed Costs	Total Costs	Main Product	By Product	Total Product	
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	7403.50	192.98	7596.48	10307.01	1552.63	17859.64	1 : 1.56
2.	Small Sugarcane Grower's (1 to 2 Hectare)	8027.97	94.40	8122.37	12814.68	1608.39	14423.07	1 : 1.77
3.	All Sugarcane Grower's	7850	122.4	7972.50	12100	1592.5	13692.5	1 : 1.717

main products and Rs. 1593 by products. The farm wise analysis shows that in non-factory area also the average cost as well as production in case of other Rabi crops per hectare. have been found to be higher on the small farms in comparison of marginal farm. The input-output ratio has also been higher on the small farm in comparison of marginal farms. Thus, the non-factory area also the small farms have been found to be more productive then marginal farms.

Total costs & production to vegetable on the farms of factory & non-factory sugarcane growers.

The category wise total costs & production of vegetable (Zaid) on the sample farms of the factory sugarcane growers analysed in Table-V-55 shows that the Average total cost of (Zaid) vegetable per hectare. have been estimated to Rs. 7271 of which Rs. 7128 have been incurred on variable cost and Rs. 143 on fixed cost. The average total production of Zaid (vegetable) per hectare. has been estimated to Rs. 16170 per hectare In case of vegetable in factory areas have been found to be higher on small farms but the average production per hectare has been found to be higher on marginal farms and accordingly the input-output has also been higher on marginal farms. Thus, the factory areas the marginal farms have been found to be more productive in case of Zaid vegetable the related data are given in Table-V-55. The of vegetables Zaid on the farms of the non-factory sugarcane growers analysed in Table-V-56 shows that the average total cost per hectare. have been estimated to Rs. 8152 of which Rs. 7955 have been incurred on variable cost and only Rs. 188 on fixed cost. The average total production of Zaid vegetable has been estimated to Rs. 15833 and the whole amount has been received from main product. The farm wise analysis shows that in non-factory areas the total cost as well as production per hectare. Zaid vegetables have been found to be higher on the marginal farm but the

Table -V-55

Category-wise Total Costs & Production of Vegetable (Zaid) on sample of Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Categories of Sugarcane Grower's	Total Costs (in Rs. Per Hectare)			Production (in Rs. per Hectare)			In-put & Out-put Ratio
		Variable Costs	Fixed Costs	Total Costs	Main Product	By Product	Total Product	
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	7130.80	122.24	7253.049	16173.59	-	16173.59	1 : 2.229
2.	Small Sugarcane Grower's (1 to 2 Hectare)	7122.79	181.39	7304.18	16162.79	-	16162.79	1 : 2.21
3.	All Sugarcane Grower's	7128.04	142.62	7270.66	16179.87	-	16169.87	1 : 2.23

Table -V-56

Category-wise Total Costs & Production of Vegetable (Zaid) on sample of Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Categories of Sugarcane Grower's	Total Costs (in Rs. Per Hectare)			Production (in Rs. per Hectare)			In-put & Out-put Ratio
		Variable Costs	Fixed Costs	Total Costs	Main Product	By Product	Total Product	
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	9276.69	237.86	9514.55	17961.165	-	17961.165	1 : 1.88
2.	Small Sugarcane Grower's (1 to 2 Hectare)	6682.24	158.87	6841.118	13785.04	-	13785.04	1 : 2.01
3.	All Sugarcane Grower's	7954.76	197.61	8152.37	15833.33	-	15833.33	1 : 1.94

input-output ratio has been found to be higher on the small farms than the marginal farms. Thus, marginal farms has been found to be less productive than small farms the related data are given in Table-V-56.

The category wise total costs & production of other (Zaid) crop on the farm s of factory and non-factory sugarcane grower

The categorywise total costs & production of other (Zaid) crop on the sample farms of the factory sugarcane growers of Khetan sugar factory, Ramkola distt. Kushinagar analysed in Table -V-57 shows that the average total cost per hectare. have been estimated to Rs. 9563 of which Rs. 9352 have been incurred on variable costs and Rs. 211 on fixed cost. The average total production in value terms in case of other Zaid crops have been estimated to Rs. 15264 of which Rs. 13333 have been received from main product and Rs. 1931 fram by products. Among the farms the average costs as well as production per hectare. have been found to be higher on small farms in comparison of marginal farms. The average input-output ratio has also been found higher on the small farms in comparison of marginal farms. Thus, small farms of factory areas have been found to be more productive for other Zaid crops. The related data are given in Table-V-57.

The categorywise total costs and production of other (Zaid) crop on the sample farms of the non-factory sugarcane growers in Ramkola block analysed in table-V-58 shows that the total average cost per hectare. have been estimated to Rs. 6935 of which Rs. 6819 have incurred on variable cost and only Rs. 176 on fixed costs. The average total production per hectare. has been estimated to Rs. 11466 per hectare. of which Rs. 9922 have been received from main product and Rs. 1544 from by product. The farm wise analysis shows that the total

Table -V-57

Category-wise Total Costs & Production of Other Crops (Zaid) on sample of Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Dist. Kushinagar

(In Rs. Per Farms)

S.No.	Categories of Sugarcane Grower's	Total Costs (in Rs. Per Hectare)			Production (in Rs. per Hectare)			In-put & Out-put Ratio
		Variable Costs	Fixed Costs	Total Costs	Main Product	By Product	Total Product	
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	9246.18	236.64	9482.82	13082.06	1751.90	14833.968	1 : 1.56
2.	Small Sugarcane Grower's (1 to 2 Hectare)	9483.33	178.57	9661.90	13645.2	2154.76	15799.96	1 : 1.63
3.	All Sugarcane Grower's	9351.69	210.80	9562.445	13332.627	1931.144	15263.77	1 : 1.59

cost as well as production per hectare have been found to be higher on marginal farms in comparison of small farm. The, input-output ratio has also been found higher on marginal farm. Thus the marginal farms of the non-factory areas have been found to be more productive than small farms. The related data are given in Table-V-58.

Distribution of annual Income on the farms of factory & non-factory sugarcane growers.

The categorywise distribution of annual income on the farms of factory sugarcane growers of the Khetan sugar factory Ramkole. distt. Kushinagar analysed in Table-V-59 shows that average annual income per farm from the sale of crop produces has been estimated to Rs. 51880 in which the maximum contribution i.e. Rs. 39964 has been reported through the sale of sugarcane against the lowest contribution i.e. Rs. 3774 through the sale of wheat. While the contribution through the sale of paddy produce has been estimated to Rs. 4173 and through the sale of other crop produces it has been Rs. 3968 per farm on an average. The farm wise analysis of income through crop produces shows that the average income through the sale of individual crop as well as total income both have been found to be higher on the marginal farms. While the total income from other sources has been estimated to Rs. 12875 per farm in which the maximum contribution has been from services, than wages and the minimum i.e. Rs. 850 from other sources. Among the farms total income from other sources has been found to be higher on the marginal farms. Accordingly the total annual income per farm has been estimated to Rs. 64755 per farm on an average which has been found to be comparatively higher on the marginal farms. Thus, the

Table -V-58

Category-wise Total Costs & Production of Other Crops (Zaid) on sample of Non Factory Sugarcane Grower's of the Command Area of Khetan Sugar Factory Ramkola, Distt. Kushinagar

(In Rs. Per Farms)

S.No.	Categories of Sugarcane Grower's	Total Costs (in Rs. Per Hectare)			Production (in Rs. per Hectare)			In-put & Out-put Ratio
		Variable Costs	Fixed Costs	Total Costs	Main Product	By Product	Total Product	
1.	Marginal Sugarcane Grower's (Below 1 Hectare)	8170.39	138.15	8308.54	12516.44	1924.34	14440.78	1 : 1.738
2.	Small Sugarcane Grower's (1 to 2 Hectare)	5944.68	102.12	6046.80	8244.68	1297.87	9542.55	1 : 1.57
3.	All Sugarcane Grower's	6818.86	116.27	6935.13	9922.48	1543.92	11466.407	1 : 1.653

annual income on the marginal farms have been better than the small farm. The related data are given in Table-V-59.

The category wise distribution of annual income on the farms of non-factory sugarcane growers in Ramkola block distt. Kushinagar. Data analysed in Table -V-60 shows that the average annual income from the sale of crop produce has been estimated to Rs. 14732 in which the maximum contribution i.e. Rs. 7021 has been from the sugarcane produce against the minimum i.e. Rs. 2353 has been contributed the sale of wheat. The contribution from the sale of paddy has been estimated to Rs. 2853 per farm and Rs. 2505 have been contributed through the sale of other crop produces the farm wise analysis shows that the average annual income from the sale of crop produces as well as the total annual income from crop produces. Both have been found to be higher on the marginal farms incomparison of small farms. The total income from other sources has been estimated to Rs. 4198 in which the maximum has been contributed through the wages and the remaining through other sources. Among the farms the average income from the other sources have been found to be higher on the marginal farms in comparison of the small farms. Accordingly the total income per farm has also been found to be on the marginal farms. Thus, the marginal farms of non-factory areas has been found to be more profitable than small farm the total annual income on the non-factory farms has been much lower than the income on the farms of factory areas. The related data are given in Table-V-60.

Table -V-59

Category-wise Distribution of Income from the sale of Crop Produce and other Sources on the farms of Selected Factory Sugarcane Growers of Khetan Sugar Factory Ramkola, Distt. Kushinagar.

(In Rs. Per Farms)

Categories of Sugarcane Grower's	Income from Scale of Crop Produces					Income from other Sources				Total Income
	Paddy	Wheat	Sugarcane	Others	Total	Service (in sesonal in Mill)	Wages	Others	Total	
Marginal Sugarcane Growers	4723.33	4045.12	40212.27	4060.50	53041.22	9000.00	3300.00	900.00	13200.00	66241.22
Small Sugarcane Growers	3608.21	3465.63	39720.44	3875.25	50669.53	9000.00	2750.00	800.00	12550.00	63219.53
All Sugarcane Growers	4172.83	3774.46	39964.36	3967.87	51879.52	9000.00	3025.00	850.00	12875.00	64754.52

Table -V-60

Category-wise Distribution of Income from the sale of Crop Produce and other Sources on the farms of Selected Non Factory Sugarcane Growers in Ramkola Block, Distt. Kushinagar.

(In Rs. Per Farms)

Categories of Sugarcane Grower's	Income from Scale of Crop Produces					Income from other Sources				Total Income
	Paddy	Wheat	Sugarcane	Others	Total	Service (in sesonal in Mill)	Wages	Others	Total	
Marginal Sugarcane Growers	2974.11	2535.94	7199.68	2550.50	15260.23	-	3250.00	1605.00	4855.00	20115.23
Small Sugarcane Growers	2775.03	2274.37	6841.52	2460.25	14351.17	-	2050.00	1890.00	3940.00	18291.17
All Sugarcane Growers	2852.23	2353.44	7021.13	2505.38	14732.18	-	2650.00	1747.50	4197.50	18929.68

Distribution of employment days on the farms of factory and non-factory areas :

The category wise distribution of employment on the farms of factory sugarcane growers of Khetan sugar factory, Ramkola distt. Kushinagar.

The data analysed V-61 shows that the total employment days per farm has been estimated to 174 mandays on an average of which 96 mondays have been found to be generated on the own farms and 78 Mondays outside the farm. Of the mandays employed on the own farms 58 days have been employed in raising the crop and 38 days in other employment in case of the mandays employed. Outside the farm 45 days have been employed in agricultural labour and 33 in other labour. The farmwise analysis shows that the total annual employment days as well as the employment days on own farms and outside the farm have been found to be much higher on the small farms in comparison of marginal farms. Thus, it is obvious that the small farmers of the factory areas have been found to be better employed than the marginal farmers. The related data are given in Table-V-61.

The category wise distribution of employment on the farms of factory sugarcane growers in Ramkola block distt. Kushinagar, data analsed in table-V-62 shows that the total annual employment days per farm in the non-factory areas have been estimated to 120 man days on an average of which 60 days have been employed on own farms and 60-days outside of farm among the days employed on own farms 35 days have been employed for raising crop and 25 day for other while in case of days employed outside the farm the maximum i.e. 33 days than the employed in other labour 27 days in agricultural labour. The farm wise

Table -61

Category-wise Distribution of Employment days on the farm of Selected Factory Sugarcane Growers of Khetan Sugar Factory Ramkola. Distt. Kushinagar

(Employment in man days per from)

Categories of Sugarcane Grower's	Employment days on the own farms			Employment days outside the farms			Total Employment Days
	Raising Crops	Others	Total	Agricultural Labour	Other	Total	
Marginal Sugarcane Growers	55	35	90	35	30	65	155
Small Sugarcane Growers	60	40	100	55	35	90	190
All Sugarcane Growers	58	38	96	45	33	78	174

analysis shows that in non-factory area also the total employment days per farm as well as the employment days on own farms and outside the farm both have been found to be higher on the small farms incomparison of marginal farms. Thus, the employment pattern has been found to be a better on the small farms incomparison of the marginal farms. In other words the marginal farms has been found to be more unemployed and under employed in the non-factory areas. The related data are given in Table -V-62.

Opinion and views of the sample factory & non-factory sugarcane growers :-

The category wise opinions view of the sample of factory sugarcane growers of Khetan sugar factory, Ramkola, distt. Kushinagar data analysed in Table V-63 shows that out of 70 sample farmers 46 opined the factory area to be the reason for more are under sugarcane 18 total cash crop and 6 told suitable conditions as the reason for more area under sugarcane. The reason for such cropping pattern on 34 opined it the suitable most cropping pattern, 20 give easy ratooning as the main reason and 16 total the less expenses as main reason for this cropping pattern. Regarding difficulties due to increase in the area under sugarcane, 46 opined that the no other substitute 16 told delay in payment in main reason and 8 total other reasons. For the difficulties due to increase in sugarcane area. For the easy disposal of sugarcane produce 36 sample farmers opined in favour and 34 opined against easy disposal for the profitable methods of sale 58 sample farmers opined in favour of direct method of sale and 12 opined against the direct method of sale. Regarding more income from sugarcane than earlier 44 opined in favour of more income than earlier and 26 replaied negatively about

Table -V-62

Category-wise Distribution of Employment days on the farm of Selected Non Factory Sugarcane Growers of the Command Area of Khetan Sugar Factory Ramkola. Dist. Kushinagar

(Employment in man days per from)

Categories of Sugarcane Grower's	Employment days on the own farms			Employment days outside the farms			Total Employment Days
	Raising Crops	Others	Total	Agricultural Labour	Other	Total	
Marginal Sugarcane Growers	25	20	45	25	30	55	100
Small Sugarcane Growers	45	30	75	30	35	65	140
All Sugarcane Growers	35	25	60	27	33	60	120

the more income than earlier. For more employment than earlier the maximum 50 sample farmer opined in favour and 20 against the more employment than earlier.

Thus, the maximum sample farmers of factory areas opined in favour of the profitable income and employment from sugarcane incomparison of other crops the related data are given in Table-V-63.

The category wise opinion & views of the sample of non-factory sugarcane growers in Ramkola Block Distt. Kushinagar analysed in Table-V-64 shows that the out of the 30 sample farmers of non-factory areas only 8 opined the factory areas to be the reason for increase in area under sugarcane, 16 opined the cash crop as main reason. Regarding the reason for such cropping pattern only 6 farmers told it suitable cropping pattern, 18 opined the easy rattooning as main reason and only 7 told the less expenses as main reason. Regarding difficulties due to increase area under sugarcane the maxmum 17 sample farmers opined that there have been no other substitute, 8 opined about delay in payment and only 5 told the other reasons. For easy disposal of produce only 8 opined in favour and 22 farmers opined negatively, for profitable method of sale all the 30 sample farmers opined against the direct method of sale. Regarding indirect method of sale 24 opined in favour and 6 against this method of sale. Regarding more income from sugarcane than earlier 20 opined in favour in 10 in against. Regarding more employment than earlier 22 sample farmer opined in favour and 8 against the more employment than earlier the related data are given in Table-V-64.

Table -V-63

Category-wise opinions and views of the Sample Factory Sugarcane Growers of the Command Area of Khetan Sugar Factory Ramkola. Distt. Kushinagar

Categories Sugarcane Growers	Reasons for more area under Sugarcane			Reason for cropping pattern			Difficulties due to increases in area			Easy Produce Disposal of not		Profitable method of sale				More Income than earlier		More Employment than earlier	
	1	2	3	1	2	3	1	2	3	Yes	No	Direct		Indiract		Yes	No	Yes	No
												Yes	No	Yes	No				
Marginal Sugarcane Growers	30	15	5	24	15	11	34	11	5	26	24	40	10			30	20	34	16
Small Sugarcane Growers	16	3	1	10	5	5	12	5	3	10	10	18	2			14	6	16	4
All Sugarcane Growers	46	18	6	34	20	16	46	16	8	36	34	58	12			44	26	50	20
	1. Due to Factory area 2. Due to Cash Crop 3. Suitable conditions			1. Suitable Cropping Pattern 2. Easy ratooning 3. Less expences through ratooning			1. No other suitable 2. Delay in Payment 3. Other reasons												

Table -V-64

Category-wise opinions and views of the Sample Factory Sugarcane Growers of the Command Area of Khetan Sugar Factory in Ramkola Block Distt. Kushinagar

Categories Sugarcane Growers	Reasons for more area under Sugarcane			Reason for cropping pattern			Difficulties due to increases in area			Easy Produce Disposal of not		Profitable method of sale				More Income than earlier		More Employment than earlier	
	1	2	3	1	2	3	1	2	3	Yes	No	Direct		Indiract		Yes	No	Yes	No
												Yes	No	Yes	No				
Marginal Sugarcane Growers	6	10	4	5	11	4	10	6	4	5	15	-	20	16	4	15	5	15	5
Small Sugarcane Growers	2	6	2	1	7	2	7	2	1	3	7	-	10	8	2	5	5	7	3
All Sugarcane Growers	8	16	6	6	18	6	17	8	5	8	22	-	30	24	6	20	10	22	8
	1. Due to Factory area 2. Due to Cash Crop 3. Suitable conditions			1. Suitable Cropping Pattern 2. Easy ratooning 3. Less expences through ratooning			1. No other suitable 2. Delay in Payment 3. Other reasons												

CHAPTER-VI

SUMMERY/CONSLUSIONS AND SUGGESTIONS

CHAPTER- VI

SUMMARY/CONCLUSIONS AND SUGGESTIONS

1. The persent study reveals that the average area devoted to sugarcane by the factory sugarcane growers has been estimated to 63.41% of the total cultivated area against only 46% area devoted to sugarcane by non factory sugarcane growers which clearly indicats that there is clear impact of sugar factory on the allocation of area under sugarcane by the farmers.

2. The arerage family size of non factory sugarcane growers has been found to be larger than the average family size the factory Sugarcane growers. While the number of farm workers incase of factory sugarcane growers has been higher than the same incase of non-factory sugarcane growers and the number of workers has been comparatively higher on the marginal farms than on the small farms.

3. The maximum area owned by the factory sugarcane growers as well as non-factory sugarcane growers has been found to be cultivated area and the cultivated area has been found to be increasing with the increase th size of farms.

4. The share of area under Sugarcane in the gross cropped area on the farms of both the categoris i.e. factory as well as Non factory Sugarcane growers has been found highest. The Cropping

intensity has been found higher on the marginal farms in comparison of small farms in the category of factory Sugarcane growers but in the category of non-factory sugarcane growers the average cropping intensity has been almost the same on maginal as well as small farms.

5. The paddy cultivation on the small farms of factory sugarcane growers has been found much expensive than marginal farms and incase of non-factory sugarcane growers, the Paddy cultivation has been found comparatively more expensive on both the categories of farms on non factory sugarcane growers.

6. The sugarcane cultivation has also been found comparatively much expensive on the small farms, than the marginal farms of factory sugarcane growers. In case of non-factory sugarcane growers also the small farms have been found highly expensive than the marginal farms.

7. Cultivation of other (Kharif) crops on the farms of both the factory as well as non-factory sugarcane growers has been found profitable on the marginal farms than small farms while marginal and small farms expenses have been found more than double in both the categories.

8. The cultivation of wheat also has been found more expansive on small farms in comparison of marginal farms of both the factory as well as non factory sugarcane growers.

9. The cultivation of Rabi sugarcane has been found comparatively more costly than kharif sugarcane on both the

categories and the small farms have been found comparatively more expensive than marginal farms of both the categories.

10. The cultivation of other (Rabi) crops on the small farms has also been found a costly affair in case of both the factory as well as non-factory sugarcane growers. While on marginal farms it has been found profitable to some extent.

11. The cultivatin of (Zaid) vegetable has been found costlyon all the farms in both the categories of factory sugarcane growers. While in case of non factory sugarcane growers the cultivation of zaid vegetables has been found cheaper than growing vegetables on the farms of factory sugarcane growers.

12. The cultivation of other (Zaid) crops has also been found to be more expensive particularly on the small farms than on the marginal farms of both the factory as well as non factory sugarcane growers.

13. From the analysis of per hectare cost of paddy it has been found that the marginal farms of both factory as well as non-factory sugarcane growers, have been found expensive incomparison of small farms.

14. Incase of sugarcane the marginal farms of factory sugarcane growers have been found expensive but incase of non-factory sugarcane growers the small farms have been found expensive than the marginal farms.

15. The per hectare cost of cultivation incase of wheat on the small farms of factory as well as non factory sugarcane growers have

been found comparatively more expensive than the marginal farms.

16. The per hectare cost of cultivation incase of Rabi sugarcane has been found higher on the small farms of both factory as well as non-factory sugarcane growers.

17. In case of other Rabi corps also the costs of cultivation per hectare has been accounted comparatively higher on the small farms of both factory as well as non-factory sugarcane growers.

18. Incase of zaid vegetables the costs of cultivation per hectare has been found almost the same on both the small as well as marginal farms of factory sugarcane growers but incase of non-factory sugarcane growers it has been higher on marginal farms.

19. Incase of other Zaid crops the cost of cultivation per hectare has been found higher on small farms of factory sugarcane growers. While in case of non-factory sugarcane growers it has been found to be higher on the marginal farms; also in case of growing zaid crops on the farms of non factory growers has been a costly affair.

Cost of Production and Input-Output ratio :-

20. Incase of paddy the average input-output ratio has been etimated to 1 : 3.02 on the farms of factory Sugarcane against 1 : 2.70 on the farms of non-factory sugarcane growers. The input-output ratio has been found comparatively higher on the marginal farms of both the categories of farms.

21. In case of Kharif sugarcane the average input-output ratio has been estimated to 1:2.00 on the farms of factory sugarcane growers against 1:1.27 on the farms of non factory sugarcane growers, the average input-output ratio in this crop also has been found higher on marginal farms.

22. Incase of other Kharif crops the marginal farms of factory as well as non-factory sugarcane growers has been found more productive incomparison of small farms.

23. In case of wheat the average input-output ratio onthe farms of factory as well as non-factory sugarcane growers has been found higher on the marginal farms and accordingly the marginal farms have been found more productive than small farms for both the categories.

24. In case of Rabi sugarcane also the average input-output ratio has been found higher on the margial farms. Thus, marginal farms in both the categories have been found to be more productive than small farms.

25. In case of other Rabi crops the average input output ratio has been higher on the small farms of factory as well as non-factory sugarcane growers. Thus, small farms have been found more productive than marginal farms in both the categories.

26. In case of zaid vegetables the average input output ratio on the farms of factory sugarcane growers have been found higher on the marginal farms. But on the farms of non-factory sugarcane growers it has been found higher on small farms. Thus, in

factory area marginal farms have been found to be more productive, but in non factory areas small farms have been more productive.

27. In case of other Zaid crops the small farms of factory areas has been found to be more productive while in non-factory areas the marginal farms have been found to be more productive.

Annual Income on the Farms

28. The total annual income from the sale of crop produce and other sources on the farms of factory as well as non-factory areas has been found higher on the marginal farms incomparison of small farms in both the categories. But it has been found comparatively lower on the farms of non factory areas than the same on the farms of factory sugarcane growers.

Annual Employment Days on the Farms :

29. The annual employment days have been found higher on the small farms of both the factory as well as non-factory areas. Thus, the small farmers have been found to be better employed than the marginal farmers, who have been more unemployed and under-employed particularly in non-factory areas.

Opinion and Views of the sample farmers of the factory areas:

30. The majority of sample farmers of the factory areas have opined that sugar cane cultivation is always profitable and employment generating than other crops of Kharif as well as Rabi season.

Opinion and Views of the sample farmers of the non-factory areas:

31. Majority of farmers of the non-factory areas also opined that growing sugarcane have been more profitable and more employment generating than all other crops. Therefore, the farmers suggested to increase the number of sugar factories in the interior areas also.

SUGGESTIONS:

1. The farmers of non-factory areas should be incouraged to devote more area under sugarcane for their better income and employment.
2. To increase more number of employed to unemployed numbers of marginal and small farmers, the factory should be extended in terms of capacity, other processing units and crushing as well as working period.
3. To increase the cropping intensity particularly on the small farms, the coverage under sugarcane (Rabi) should be increased in both the categories.
4. The coverage under other crops showed also be increased particularly in the non factory areas where sugarcane cultivation is much expensive.
5. In Zaid season the cultivation of the other potential crops should be increased on the farms of both the factory as well as non-factory areas.
6. In Rabi season instead of wheat cultivation some other

profitable crops should be grown because wheat cultivation has been found to be much expensive, less remunerative in both the areas.

7. In case of sugarcane ratooning to make the sugar cane production more profitable the use of inputs should be improved according to the conditions of the farmers.

8. The per hectare cost of cultivation in case of sugarcane, Paddy, wheat should be minimized to make these crops more profitable by increasing the minimum support prices of the crop produces from these crops.

9. In case of Rabi sugarcane cost of cultivation must be minimized particularly on the small farms of both the categories so that the small farmers may devote more area under sugarcane.

10. In case of sugar cane the rate of input-output ratio should be increased on the small farms of both the categories.

11. In kharif season to increase the coverage under the crops particularly on the small farms more suitable variety of crops should be practiced.

12. To increase the annual income of marginal as well as small farmers of both the areas the rate of wages as well as the number of employment days should be increased through various other sources.

13. The complexity of sugarcane marketing facility should lbe liberalized to increase the area and production of sugar cane by

farms in the command area of the sugar factory.

14. Easy payment should be ensured so that the farmers may allocate more area under sugarcane.

15. Sugarcane growers shouldl be assisted by the self help groups (SHG) to facilitate the production and marketing of sugar cane.

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APPENDIX

SCHEDULE & QUESTIONAIRE FOR THE STUDY ON :

"Role of Sugar Factory in Proverty Amelioration of the Poor Cane Growers in Kushinagar. Dist. Of U.P."

SCHEDULE-I

1 General Identification

[a]

[i] Name of the selected cane growers .....

[ii] Father's Name .....

[iii] Village .....

[iv] Block .....

[v] District .....

[vi] State .....

[b]

[i] Total area owned in hectares .....

[ii] Cultivated area in hectares .....

[iii] Area under sugarcane in hectare .....

[c]

Economic status of the farmers .....

[i] Marginal [up to 1 heact.]

[ii] Small [1 to 2 heact.]

[d] Category of sygarcane grower's :

[i] Growing for factory only .....
(Sugar factory growre's)

[ii] Growing but not selling to factory .....
(Non-sugarcane factory grower's)

[e]

Whether Member/Shareholder of the Sugar factory Yes/No.....
If yes since how many years .....

Investigated by

Date :

2. Size of the Family and Work-Froce

S.No.	Details	Male	Female	Children	Total
1.	Members				
2.	Farm-Worker [a] Family [Full-time] [b] Family [Part-time] [c] Hired Workers (i) Permanent (ii) Casual				
3.	Non-Farm Workers				
4.	Helpers				

3. Land Utilization

S.No.	Particulars	Irrigated Area	Unirrigated Area	Total
1.	Land Owned			
2.	Leased-in			
3.	Leased-out			
4.	Area Under Orchards & Groves			
5.	Uncultivated Area			
6.	Cultivated Area []operational Area]			

SCHEDULE-II

1. Cropping Pattern Followed

S.No.	Crops Grown	Area Irrigated [in hect.]	Area Unirrigated [in hect.]	Total [hect.]
1.	Kharif [I] Paddy [ii] Sugarcane [iii] Maize [iv] Groundnut [v] Arhar			
2.	Rabi [i] Wheat [ii] Potato [iii] Sugarcane [iv] Peas [v] Mustard [vi] Maize			
3.	Zaid [I] Moong [ii] Sunflower [iii] Vegetable [iv] Uard			

2. Crop-Wise Production

S.No.	Crops Grown	Production			
		Main Product		By-Production	
		Qty. in Qtls	Value in Rs.	Qty. in Qtls	Value in Rs.
1.	Kharif				
	[I] Paddy				
	[ii] Sugarcane				
	[iii] Maize				
	[iv] Groundnut				
	[v] Arhar				
2.	Rabi				
	[i] Wheat				
	[ii] Potato				
	[iii] Sugarcane				
	[iv] Peas				
	[v] Mustard				
	[vi] Maize				
3.	Zaid				
	[I] Moong				
	[ii] Sunflower				
	[iii] Vegetable				
	[iv] Uard				

3. Crop-Wise Marketable and Marketed Surplus on Farms

S.No.	Crops Grown	Marketable Surplus		Marketed Surplus		Marketing Cost incurred in Rs.
		Qty. in Qtls	Value in Rs.	Qty. in Qtls	Value in Rs.	
1.	Kharif					
	[I] Paddy					
	[ii] Sugarcane					
	[iii] Maize					
	[iv] Groundnut					
	[v] Arhar					
2.	Rabi					
	[i] Wheat					
	[ii] Potato					
	[iii] Sugarcane					
	[iv] Peas					
	[v] Mustard					
	[vi] Maize					
3.	Zaid					
	[I] Moong					
	[ii] Sunflower					
	[iii] Vegetable					
	[iv] Uard					

5. Income From Other Sources

S.No.	Source of Income	Annual Income in Rs.
1.	Service	
2.	Wages earning	
3.	Income from Allied Activities	
4.	Other	

QUESTIONNEIRE

1. Why do you grow so much Sugarcane ?

2. If devoted large area under Sugarcane why ?

   Give Reasons : [i]

   [ii]

   [iii]

3. Are you satisfied with your present cropping pattern if No.

   Give Reasons : [i]

   [ii]

   [iii]

4. How will you increase the area under Sugarcane ?

   [i] By Sustitution :

   [ii] Other :

5. Difficulties likely to be faced in case of any increase in the area.

   [i] Inputs :

   [ii] Outputs :

   [iii] Others :

6. Do you grow this crop because of easy farm produce disposal ?

   Yes/No

7. Do you grow sugarcane because of price incentives ?

   Yes / No

8. Which is more profitable source of income from Direct sale or indirect sale to sugar factory ?

9. Do you get more income on your farm from earlier ?

   Yes/No

10. Did you get more employment on your farm from earlier ?

    Yes/No